

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

Dent's Modern Language Series

EDITED BY WALTER RIPPMANN, M.A.

ELEMENTS OF PHONETICS

ENGLISH, FRENCH AND GERMAN

5

THE UNIVERSITY OF CHICAGO
PRESS

UNIVERSITY OF CHICAGO PRESS

All Rights Reserved

CHICAGO, ILL. 60607

La
V6667K
Er

ELEMENTS OF PHONETICS

ENGLISH, FRENCH & GERMAN

TRANSLATED AND

ADAPTED BY

WALTER RIPPMANN

FROM

PROF. VIETOR'S

"KLEINE PHONETIK"



J. M. DENT & CO.

29 AND 30 BEDFORD STREET, LONDON, W.C.

1899

✓
144
457996
2. 4

Messrs J. M. DENT & CO. also publish the following Books on the Early Teaching of Modern Languages, in which due regard is paid to Phonetics:—

ON THE TEACHING OF ENGLISH READING

By NELLIE DALE. Price 2s. 6d. net.

Explaining the method to be employed in connection with the "Walter Crane Readers."

HINTS ON TEACHING FRENCH

By WALTER RIPPMANN. Price 1s. 6d. net.

Explaining the method to be employed in connection with "Dent's First and Second French Books."

HINTS ON TEACHING GERMAN

By WALTER RIPPMANN. Price 1s. 6d. net.

Explaining the method to be employed in connection with "Dent's First German Book," and "Dent's German Reader."

PREFACE

THE growing demand for better instruction in modern languages and the consequent inquiries into the methods adopted in other countries have led many English teachers to consider how their pupils can best learn to pronounce French and German. The compilers of Grammars and First Courses have not been slow to take note of this tendency, and hardly a book of this kind has been issued in the last few years which does not supply a chapter on 'pronunciation.' Some, indeed, frankly refuse to do so, alleging that the teacher alone can supply the required help ; this is no doubt true as far as the learner is concerned, but no aid is given to the teacher. In others we find certain 'rules,' of which many are quite wrong, and even an 'imitated pronunciation,' which has only to be read aloud by those familiar with the language to be at once rejected as a gross travesty.

But it is not only in connection with French and German that this unscientific treatment of the living sounds of speech has had grave consequences. In English the spelling of words represents a pronunciation that has long been superseded ; the real language of sounds has developed unceasingly, the conventional

symbols have undergone but little change. Some of the irregularities of our spelling are obvious, and the representation of a variety of sounds by *ough* has been instanced many times. But the full extent to which the sounds and the signs are opposed to each other is hardly suspected by the untrained observer; and he is so much under the influence of the written form of words that he often refuses to accept the phonetician's accurate record of his speech as representing his pronunciation. Very few of those who have given no special attention to the sounds as such are able to give the pronunciation of the common words *was*, *had*, *of*, *the*, which they themselves are constantly using; and they are not a little shocked at hearing that they regularly drop *h* in the weak forms of *him* and *her*. When these and many other unexpected facts have been pointed out, the absolute inadequacy of the spelling as a guide to the pronunciation is clearly recognised, and the question is often asked, What is to be regarded as the standard? What is the 'best English'?

Opinions are still much divided, but a definite course must be taken. In England the capital has so long exerted a preponderating influence in life and in letters, an influence which shows no signs of waning, that we may confidently regard London (or southern English) speech as the standard. Not, of course, 'cockney' speech, but the speech of educated men and women. If in any particular case it can be determined what is the pronunciation of the clear majority of educated Londoners, this may be accepted as 'correct.' Unfortunately, the number of trained

observers is small, and it is consequently hard to obtain statistics ; but in many cases one's own circle of acquaintances suffices for determining doubtful points. In France the same is true of good Parisian French ; while in Germany the best Berlin speech, and, above all, the language of the stage as determined by a recent conference, are to be taken as the standard ; the speech of Hanover contains so many provincial peculiarities that it cannot by any means be regarded as a model.

The object of this little book is to clear away many misconceptions that exist as to the spoken language of England, France and Germany. For English this has been done by Dr Henry Sweet, whose admirable *Primer of Spoken English* is, however, by no means as well known as it should be ; and the Walter Crane Readers, written by Miss Dale, the first books for teaching English reading in which the spoken language is made the starting-point, whilst the conventional spelling is retained, should do much to bring about an improvement, particularly in preventing what is vaguely described as 'affected' or as 'slovenly' speech.

The term 'affected' usually refers to a manner of speech which is felt to be unlike that commonly employed by people belonging to the same class or set as the speaker, and which is regarded as an endeavour to improve on that speech. The speaker thus assumes an attitude of superiority, which causes the usual resentment. It is therefore obvious that the term is relative : what is 'affected' in one set may

excite no remark in another. This 'affectation' appears, as a rule, most strikingly in the pronunciation of certain words, which are then quoted in proof of the charge made. To the student of phonetics this is an indication of some value, but as yet little has been done to gather such expressions of opinion. We are unable to give a good account of the leading features of the academic, the sporting, or the clerical varieties of southern English speech, though these are spoken by members of the same social class; much less has any attempt been made to describe the dialects of 'cockney' English.

Those who use 'slovenly' speech may be said to represent the radical tendency; they yield unconditionally to the most recent developments of speech, many of which never obtain general acceptance. They have either had no careful training in their youth, or the attention they give to other matters has made them indifferent to this. In many cases such an explanation may be found for carelessness of utterance; but when slovenly speech is met with in the lecturer or preacher, it may well cause surprise, and the teacher of elocution is as necessary for correcting this defect as in questions of voice production.

This is not the place to discuss how far teachers and manuals of elocution are satisfactory. But it may be well to point out that the delivery of a public speaker must naturally differ from ordinary speech, just as the face-play and gestures of the actor differ from what we are accustomed to see in everyday life. The teacher of elocution will rightly insist upon perfect distinctness of speech; he will

give valuable directions for breathing, and for the use of varying pitch of voice to express the emotions ; but he is altogether mistaken, if he denounces the ordinary speech of the educated as 'slovenly,' and he essays a hopeless task if he sets himself to check the natural progress of the language. It is right that he should adopt a conservative attitude ; but he must be careful not to teach any particular pronunciation if he has reason to believe that it is not accepted by the majority of educated speakers ; that is to say, if it is not standard English.

It does not seem to be quite generally understood that the development of language is a natural progress ; and the word 'decay,' still sometimes applied to it, should be relegated to the limbo of forgotten grammatical terms and catch-words.

This book will, however, in all probability first be used by teachers of French and German, and to their notice it is specially commended. Of late years, in every serious discussion of the methods of teaching modern languages, it has been urged that a training in phonetics is not merely advantageous, but essential, if the teachers are English men and women, as they undoubtedly should be in the overwhelming majority of cases. The *Elements of Phonetics* are based on the well-known works of Professor Vietor, one of the pioneers of the 'reform' movement. The proofs have been most carefully revised by him, as well as by Dr R. J. Lloyd, Honorary Reader in Phonetics, University College, Liverpool ; by Miss Dale, author of the "Walter Crane Readers" ; by

Dr H. Frank Heath ; by Mr W. G. Lipscomb, M.A., Honorary Secretary of the Modern Language Association ; by Mr H. W. Atkinson, M.A., of Rossall School ; and by Mr A. T. Baker, B.A., Ph.D., of the County High School, Isleworth.

Teachers and students have in this book an elementary guide to a subject which cannot fail to interest them ; a guide which is trustworthy, and will help the teacher to level the path of his pupils, and the student to gain an insight into the working of language which he could acquire in no other way.

The description of the 'Organs of Speech' (§§ 1-20) I have written myself ; the rest is largely a translation of the corresponding part of the *Kleine Phonetik*. For shortcomings I accept full responsibility ; the credit for most of what is good is due to Professor Vietor, and to the friends already mentioned. For any suggestions which will make the book more lucid or more accurate I shall be very grateful.

WALTER RIPPMANN.

LONDON,
Christmas, 1898.

CONTENTS

	PAGE
THE ORGANS OF SPEECH—	
<i>List of Contents</i>	
Organs of Breathing	1
Organs of Articulation and Resonance :	
The Larynx	2
The Mouth	9
The Nose	13
THE SEPARATE SOUNDS OF SPEECH—	
Designation of Sounds	17
Articulation of the Larynx	20
Articulation of the Mouth	
<i>List of Contents</i>	25 and 65
SOUNDS IN CONNECTED SPEECH—	
<i>List of Contents</i>	97
INDEX	139

STATION

STATION NO. 1000

DATE

TIME

NAME

ADDRESS

CITY

STATE

COUNTY

POST OFFICE

TELEPHONE

TELEGRAM

MAIL BOX

STATION

STATION

STATION

STATION

STATION

STATION

STATION

STATION



THE ORGANS OF SPEECH.

Plate III. in A. v. Luschka's 'Der Schlundkopf des Menschen,' reproduced by permission of the Publishers, Messrs H. Laupp & Co., Tübingen.

THE ORGANS OF SPEECH.

§ 1. THE current of air issuing from the lungs is the essential element of all speech. It is the rough material from which we obtain an endless variety of sounds, the current of air being acted upon by the articulations, which produce or modify sound.

We shall consider first the organs of breathing: diaphragm, lungs and windpipe; and then the organs of articulation and of resonance—the ‘organs of speech’ in a narrower sense—larynx, mouth and nose.

ORGANS OF BREATHING.

§ 2. In ordinary *breathing*, the diaphragm—which is convex if viewed from above (like the top of a balloon, roughly)—is flattened by muscular action and the ribs are expanded: the lungs have more room and air is drawn in; this is *inhalation*. Then the diaphragm reverts to its natural form; the space which the lungs can occupy becomes smaller and the air is forced out, after undergoing certain chemical changes which do not concern us here; this is *exhalation* or *expiration*.

As a rule the breath is drawn in and expelled through the nose, windpipe and the bronchial tubes

which communicate with the left and right lungs respectively ; the two processes take about the same time in breathing.

By means of the laryngoscope we can look right down the throat, and even see the branching off of the bronchial tubes ; see the diagram on p. 6.

§ 3. In *speaking* the conditions are somewhat different. As the exhaling of breath requires no muscular action, but merely implies the return of the diaphragm to what we may call its natural position, it is better suited for the production of speech than inhalation. Consequently certain muscles are employed to hasten the process of drawing in the breath and to prolong that of exhaling, as also to regulate the pressure of air in each case, according as the speech sounds to be uttered require it. The breath passes almost entirely through the mouth.

It is not impossible to speak by means of inhaled breath, and short words are sometimes produced in this way ; *e.g.* *no*, or the first sound in *oh dear*.

ORGANS OF ARTICULATION AND RESONANCE.

The Larynx.

§ 4. The upper part of the windpipe is called the *larynx*. As it is of particular importance for the production of speech, but cannot generally be examined as easily as the organs of the mouth, a somewhat detailed description will be necessary.

§ 5. The relative position of the larynx is clear from the plate opposite p. 1.

Its shape is due mainly to the *thyroid* cartilage (or 'shield cartilage'), known also as the 'Adam's Apple,' No. 1 on the diagrams (on pp. 3 and 5).



It consists of a shield, the two halves of which are joined in front, forming an edge, which can be felt through the skin, and which is particularly noticeable in the case of men. At the back these 'halves' do not meet, but leave a space for the *cricoid* cartilage (or 'ring cartilage'), No. 4 on the diagrams. This has roughly the shape of

a signet ring, with the signet behind ; the front half of it can easily be felt underneath the lower edge of the 'shield' cartilage.

The two *arytenoid* cartilages ('adjusting cartilages') have a very irregular shape ;¹ they are numbered 2 on the diagrams. With their base they rest on the 'signet' of the ring cartilage ; and one side of each is attached to one of

the two *vocal chords*. (The left diagram on p. 3 gives the cartilages only ; the chords, numbered 3, appear in the right diagram, and in that on p. 5).

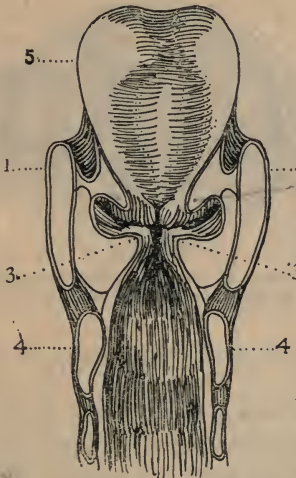
These are horizontal membranes stretching from the 'signet' of the ring cartilage (where each is attached to one of the adjusting cartilages), to the inner edge where the halves of the shield cartilage meet. The vocal chords are connected with the left and right walls of the larynx respectively.

The interval between the vocal chords is called the *glottis* ; we may further distinguish that part which lies between the adjusting cartilages as the *whispering* (or cartilaginous) *glottis*, the rest as the *voice glottis*.

§ 6. The following diagram is a transverse section of the larynx, the line of section being directly in front of that part of the adjusting cartilages which is connected with the vocal chords.

¹ As a matter of fact they have roughly the shape of a three-sided pyramid, though this is not obvious from the diagrams.

This clearly shows the narrowing of the larynx through which the breath has to pass. 1,1 are the 'half shields' of the thyroid, 4,4, sections of the ring cartilage; 3,3' are the left and right vocal chords respectively. Immediately



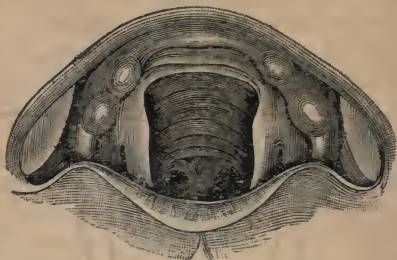
These vocal chords seem to play no part in production of speech with a narrow throat

above them there is a narrow recess (the 'sacculus of Morgagni') and above it are the so-called 'false vocal chords,' which play no part in the production of speech.

§ 7. The larynx can be closed above by a kind of lid, the *epiglottis* (No. 5 on the diagrams, pp. 3 and 5); this is regularly done in eating and drinking in order to prevent the food from entering the windpipe.

§ 8. In ordinary *breathing* the epiglottis is raised and the glottis is open, so as to leave a free passage for the air. If we require an exceptional amount of

air, say for blowing out a candle, the glottis is opened to its fullest extent, as is shown in the following diagram.



Laryngoscopic view of the vocal chords opened to their widest extent, showing the windpipe to its bifurcation.

§ 9. In *speaking* the larynx plays a far more important part.

In the case of some sounds it is passive, remaining in the same position as for ordinary breathing.

Sometimes the glottis is narrow,¹ and the breath brushes past the edges of the vocal chords, which gives an [h] sound (see § 24). Or the chords are pressed closely together, the air is stopped for a moment and then bursts the closure. Then we have, according to the amount of energy expended, a 'glottal stop,' 'clearing the throat,' or 'coughing' (see § 32). These sounds do not, however, occur to any large extent in ordinary speech.

§ 10. Far the most important function of the vocal

¹ The way in which the adjusting cartilages can change the size of the glottis is shown in the note on p. 8.

chords is the production of *voice*, which is an essential element of the majority of sounds in ordinary speech.

When the vocal chords are brought near to one another and suitably stretched the current of breath is able to set them vibrating fast enough to produce a musical sound, which is here termed 'voice.' Those sounds which are produced by breath which has first set the vocal chords vibrating, *i.e.* sounds with 'voice,' are called voiced; and those in the production of which this vibration plays no part are voiceless.

In *whispering* the voice glottis (see § 5) is closed, and the air passes through the whispering glottis only; there is hardly any difference of pitch, and the 'voiced' sounds of ordinary speech are uttered without 'voice.' a)

Note 1.—It is well to gain a clear idea of what is meant by 'voice'; and it is not hard to do so, as the vibration of the vocal chords may be felt in various ways. It is convenient to use pairs of sounds like [v, f], [z, s] or [ʒ, ʃ],¹ for we can continue them for some time. If then we utter the first of each pair, and place a finger on the throat, or close our ears, or put our hand on the top of our head, we shall notice quite distinctly that the chords are vibrating. If we then utter the second sound of each pair we shall miss the vibrations. The difference becomes very marked if we alternate between the voiced and voiceless sounds, saying, *e.g.* [zszszs], without making a break between them. When this has been tried with 'continuants,' the vibration in the case of voiced 'stops,' *e.g.* [g, d, b], will not escape notice; and the absence of 'voice' will also be recognised as the peculiar feature of whispered speech.

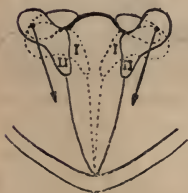
Note 2.—The explanation of the vocal chords given

¹ [ʒ] is the sound written *z* in leisure; [ʃ] is the sound usually written *sh*.

above has purposely been made in the simplest terms, and may suffice to give some idea of their function. It is, however, not without interest to see the way in which various muscles act on the adjusting (arytenoid) cartilages, so as to enable these to draw the vocal chords into various positions suitable to the exigencies of speech, singing and so on. The following diagrams are taken from Professor Alex. Macalister's *Textbook of Human Anatomy*.



Opening of the glottis, showing the action of the crico-arytenoides posterior muscle, which draws the arytenoid cartilages from I, I to II, II.



Closing of the voice glottis, showing the action of the thyro-arytenoid muscles, drawing the vocal chords from II, II to I, I.



Closure of voice glottis and breath glottis showing the action of the arytenoideus proprius muscle, drawing the arytenoid cartilages from the neutral position I, I to the position II, II.

Note 3.—The whole range of the human voice is about four octaves ; but in any individual it is rarely more than from two to two and a half octaves.

The 'tone of voice' as a whole depends on the nature of the vocal chords : when they are relatively long and thick (as usually in men), the vibrations are slower and the voice deeper ; when they are shorter and thinner (as in women and children), the vibrations are more rapid and the voice higher.

Differences of pitch in the same voice are obtained by varying degrees of tension in the vocal chords, and of force in the current of air. A sound may be of uniform pitch and vary in loudness ; such variation is due to an increase or decrease in the force of expiration.

The Mouth.

§ 11. In discussing the organs of the mouth, it will not be necessary to give detailed descriptions ; for the inside of the mouth can be easily examined.

It is surprising how few people have ever looked well into their mouth. The student of phonetics should always have a hand-glass by his side, and should use it constantly, until he is quite familiar with the appearance of the 'oral' organs of speech. He will very soon find out the best angle at which to hold it, so that the mirror may at once reflect light into the mouth and enable him to watch it.

§ 12. The *pharynx* is the hollow space above the larynx, separated from it by the epiglottis (see § 7). It is at the same time the back part of the cavern of the mouth, from the rest of which it is separated (during nasal breathing) by

the *soft palate* or *velum*, the end of which is the *uvula*, which can be clearly seen by means of a hand-glass. The soft palate passes over into

the *hard palate*; the difference can be easily noticed by letting the tip of the finger travel along the roof of the mouth from front to back.

§ 13. In *breathing* the velum hangs down as a rule, leaving a free passage for the air on its way through nose, pharynx, larynx, windpipe, bronchial tubes and lungs.

§ 14. In *speaking*, on the other hand, the velum in most cases closes the nasal passage completely by pressing against the back surface of the pharynx; the breath can then pass through the mouth only. In some sounds, however, the velum is lowered, and breath passes through the nose as well as the mouth ("nasal vowels"); or the passage through the mouth is closed, and the breath can pass through the nose only ("nasals").

It is easy to determine whether a sound is oral or nasal, or both. A flat ruler is placed with one edge on the upper lip, with the other against cold glass. The breath as it issues will dim the glass; and therefore if the sound is nasal, the glass will be dimmed above the ruler. To ascertain the relative amount of oral and nasal breath in a vowel we require delicate instruments.

§ 15. When the current of air has caused the vocal chords to vibrate, and then passes out through the mouth without encountering any obstruction or check, the result is a *pure* or *oral vowel*; if the breath has not produced voice before passing through the mouth, we obtain the corresponding [h] sound (see §§ 26, 75).

If the soft palate has not closed the passage through the nose, and some of the breath is allowed to escape that way, the result is a *nasal vowel*.

§ 16. The nature of the vowel varies according to the shape of the oral passage (the passage through the nose being invariable.) The inside of the mouth assumes different shapes, owing to changes of the *tongue*: this is quite the most important instrument in modifying the current of breath, and thus causing variety in vowels. It is capable of assuming many shapes; some may be seen in the transverse sections on pp. 28, 29. We distinguish the *point* of the tongue, the *blade* (above and behind the point when the tongue lies flat), the *front* (yet further behind), and the *back*; also the *ridge* or *dorsum* (an imaginary line drawn along the centre of the top of the tongue from end to end), and the *rims* (running down both sides of the tongue when it lies flat).

The *lips* also vary in shape, and thus modify the quality of vowels. As may be seen from the diagrams opposite p. 27, the corners of the mouth can be drawn far back, the lips may be left as in breathing through the mouth, or they may be rounded till only a very small opening is left; there are obviously numberless intermediate stages between these.

The *lower jaw* is lowered to various degrees; usually this coincides with a change of tongue position. The lowering (or the angle of the jaws, or the distance between the rows of teeth)

upper teeth, or the ridge (called 'alveoles')
above the upper teeth, or the hard palate,
dental (point, lingual) continuants, stops, nasals ;
between the lower lip and upper teeth,
labiodental (lip-teeth) continuants, stops ;
between the lips,
bilabial (lip-lip) continuants, stops, nasals.

§ 19. Little remains to be said about

The Nose.

It has been pointed out that in *breathing* the velum is lowered so as to leave a free passage for the breath.

In *speaking* the nose plays a subordinate part, as it serves only to give a passage to breath in the nasal vowels and the nasals.

The resonances of the hollows of the nose are invariable, as the shape of these hollows is subject to no change.

In English speech, and generally in singing, most vowels have some nasal resonance, due to the passage through the nose not being firmly closed by the velum. In speech it is not usually noticed, when it is slight ; when it is marked, we call it a 'nasal twang.' Singers use it because the additional resonance adds to the sonority of the voice.

NOTE.

§ 20. A few common misconceptions may here be mentioned.

No sound is produced 'in the chest' or 'in the head': a man may speak as though his voice came from his boots, and a 'ventriloquist' may pretend to talk ventrally, but no sound is produced lower than the 'Adam's apple.'

We say 'he is speaking through his nose' when a person has a bad cold. The exact opposite is the case, for the passage through the nose is obstructed and the breath cannot make its way through it. The most obvious result is the substitution of [g, d, b] for [ŋ, n, m].

It is sometimes maintained that children have an innate aptitude for learning the language of their country: but a child will learn the language of the people who take care of it, even though it be quite different to that of its parents, and will learn it just as well as a native child.

The pronunciation of a foreign language cannot be learnt by means of an 'imitated pronunciation,' such as is supplied in numerous Elementary Grammars, First Courses, etc. It is impossible to represent the sounds of one language by means of symbols which are used in another language to designate sounds only approximately like them. Thus *foh* appears in one of these books for the French *faut*, and *clay* for *clef*;

in both cases the reader who has no further help will pronounce diphthongs in place of the simple long vowels, and in the second word a *cl* with *c* so far forward as almost to become a *t*, and certainly with an English *l*.

THE SEPARATE SOUNDS.

Designation of Sounds.

§ 21. To avoid the necessity of constantly repeated descriptions, we must be able to express each sound by a clear and unmistakable symbol; we require a phonetic alphabet. The current spelling of English, French and German will not serve our purpose, for it is inconsistent (*e.g.* English *not* and *what*, French *si* and *ici*, German *vor* and *für*), or awkward and inadequate (*e.g.* English *thin*, French *mon*, German *schön*).

In this book a phonetic transcript [in square brackets] is therefore employed, and it is the alphabet of the *Association Phonétique Internationale* (the journal of which is *Le Maître Phonétique*, edited by Dr Paul Passy, 11 route de Fontenay, Bourg-la-Reine). The following table contains the symbols for such sounds as we shall meet with in English, French and German speech; the value of those symbols which are not familiar will become clear as we proceed.

Clarendon type is employed to represent letters and words in the conventional spelling.

	<i>lips</i>	<i>lip and teeth</i>	<i>point of tongue</i>
CONSONANTS { <i>with closure</i> <i>with narrowing</i> <i>with narrowing</i> } { <i>liquids</i> <i>liquids</i> } { <i>stops</i> <i>nasals</i> <i>lateral</i> <i>trilled</i> } { <i>continnants</i> }	b p		d t
	m m ^o		n n ^o
			l l ^o
			r r ^o
	^{wet} w ^{whell} ʍ	v f	ʃ θ
	q q ^o v v ^o		s z ʒ ʒ
VOWELS { <i>tongue highest</i> <i>tongue half-way</i> <i>tongue lowest</i> }	(y u)		
	(ø o)		
	(æ ɔ)		

o (e.g. in m, n) means 'voiceless'; French **prisme** [prism].

: indicates length; English **half** [hɑ:f], French **inné** [in:e].

˘ over a symbol means 'not syllabic'; English **now** [naʊ].

' (preceding) indicates accent (stress); English **balloon** [bə'lu:wn].

ounds.

front of tongue	back of tongue	uvula	glottis
	g k		ʔ
n ñ	ŋ ɲ		
		R R̥	
j y ɟ ʝ	ɣ x		h
i (y)	(ü) (u)		
e (ø)	ə (ö) (o)		
ɛ (œ)	(ɔ)		
æ	ʌ		
a	ɑ		

nasal vowels: \bar{a} \bar{e} \bar{o} $\bar{\alpha}$; thus French *lent* [$l\bar{a}$], *fin* [$f\bar{e}$],
long [$l\bar{o}$], *un* [$\bar{\alpha}$].

() indicates lip rounding.

˘ after a vowel means 'more open.'

˙ after a vowel means 'more close.'

ARTICULATION OF THE LARYNX.

1. Full opening of glottis.

§ 22. When the glottis (the interval between the vocal chords) is fully opened, the breath passes through without producing any sound.

Sound may, however, be subsequently produced, when the breath reaches the articulations of mouth and nose.

2. Slight opening of glottis and closure of glottis.

§ 23. Notice the production of 'voice,' described above in § 10; it is not a speech-sound of itself, but an important part of many such sounds, which are hence called *voiced*; the rest are *voiceless*.

^a Slight opening of glottis.

§ 24. If the glottis be made sufficiently narrow, the breath brushing past the edges of the vocal chords produces a voiceless glottal continuant (or fricative), which we must not at once identify with the Greek 'spiritus asper' or our own *h*. The phonetic symbol is [h].

This vowel is called a - Vowel calls this Kehlkopfhauchlaut

There are many possible varieties of it: the current of breath may vary in force, the glottis may vary in narrowness; or, again, the current of breath may remain of the same force throughout, or its force distinctly increase or decrease; or the glottis may remain the same throughout, or become narrower and narrower; and so on. When the current is very considerable and the glottis very narrow, we have what is known as 'wheezing.'

§ 25. It is possible to produce a voiced [h] sound: the voice-glottis (see § 5) is allowed to vibrate, and the cartilaginous glottis is opened as for whispering. Thus 'voice' and the [h] sound are formed at the same time. Symbol [h̥]. *= sound of growling, howl, etc.*

§ 26. Apparently the glottal continuant [h] does not occur in English, French or German in ordinary speech: as a rule the various sounds which are written h start with the glottis open, and it does not become narrow until the production of the following vowel. The sound of this h results from the breath passing through the mouth when its articulations have already 'got into position' for the vowel that is going to be uttered. Indeed, this h may be regarded as unvoiced [a], [e], etc., according as the following vowel is [a], [e], etc.

§ 27. As, however, h is felt to be a consonant of uniform value, and as indeed in emphatic diction the continuant [h] is actually used (in place of, or together with, the sounds just mentioned), we shall proceed to discuss [h] here.

*a = The "ateu glottis" is whatever glottis. Victor p. 17
 i.e. it is the h̥ unless the glottis closes enough
 for the sound (as in) of Victor p. 221*

§ 28. [h] varies according to the nature of the current of breath.

If the current begins with full force for the [h], and passes undiminished to the vowel, we have the simple [h]; this is its common form in German.

If the current distinctly diminishes before the vowel is sounded, we obtain the usual English form of [h], more accurately [h>], or better still [<h>].

If on the other hand the current is weak at first, and does not reach the maximum of force until the sounding of the vowel, the resulting 'soft breath' no longer suggests a distinct [h]; it may then precede an initial vowel without being felt as a separate sound. We may designate it [h<] or simply [<].

§ 29. ENGLISH [h] (more accurately [h>] or [<h>]): **hold** [hoʊld] ([h>oʊld] [<h>oʊld]), occurs only at the beginning of words; and before accented vowels.

It is lost in enclitics when these are unaccented ('weak forms'), except at the beginning of a sentence.

	<i>weak</i>	<i>strong</i>
had	[əd]	hæd]
has	[əz]	hæz]
have	[əv]	hæv]
he	[ij]	hi j]
her	[ə]	hə:]
him	[im]	him]
his	[iz]	hiz]

a. Emphatic ^{ug} h - like German.

Written **h** is mute in **heir** [eə], **honest** [ɔnist], **honour** [ɔnə], **hour** [aʊə], and their derivatives; also in **John** [dʒɔn].

Some say a **history**, but an **historical novel**,
a **habit**, but an **habitual action**.

A 'soft breath' (see § 28) usually precedes the initial vowel of a word: **old** [oʊld], more accurately [\langle oʊld].

§ 30. FRENCH in regular speech has no [h]. The written **h**, whether it be 'h muette' or 'h aspirée,' is in every case mute; e.g. **héros** [ero] and **héroïne** [eroin]. *e*

§ 31. For GERMAN [h] compare § 28. It occurs only at the beginning of words: **herab** [he'rap], **hinein** [hi'naïn]; elsewhere only before vowels with chief or secondary accent ('Hauptton' or 'Nebenton'): **Halt** [halt], **Anhalt** [ʔanhalt] or [ʔan'halt].

[h] precedes a vowel with secondary accent almost exclusively in compound words; particularly compounds with **-heit** [haït], preceded by a consonant, as **Weisheit** [vaïshaït] or by a vowel, as **Roheit** [ro:haït]. Also in **Uhu** [ʔu:hu:], **Schuhu** [ʔu:hu:]; and in foreign words, as **Alkohol** [ʔalkohəl], **Sahara** [za:hara:].

In all other cases written **h** is mute, whether it be etymologically justified, as in **sehen** [ze:ən], **sieh** [zi:]; or a sign of lengthening, as in **gehen** [ge:ən], **geh** [ge:].

etc. says "h" pronounced sometimes in French especially before strong tonic syllable as "la honte"

Closure of glottis.

§ 32. If the current of breath is stopped by the glottis being firmly closed, and if it suddenly bursts through this obstacle, a voiceless stop is produced, generally called the *glottal stop*. It is sometimes falsely called 'spiritus lenis.' Phonetic symbol [ʔ]. When the production of [ʔ] is energetic, we have what is known as 'clearing the throat' and 'coughing.'

§ 33. In ENGLISH and FRENCH the sound hardly occurs.

§ 34. In GERMAN the glottal stop [ʔ] regularly precedes the vowel at the beginning of a word, or of the second part of a compound, when the compound is still felt as such.

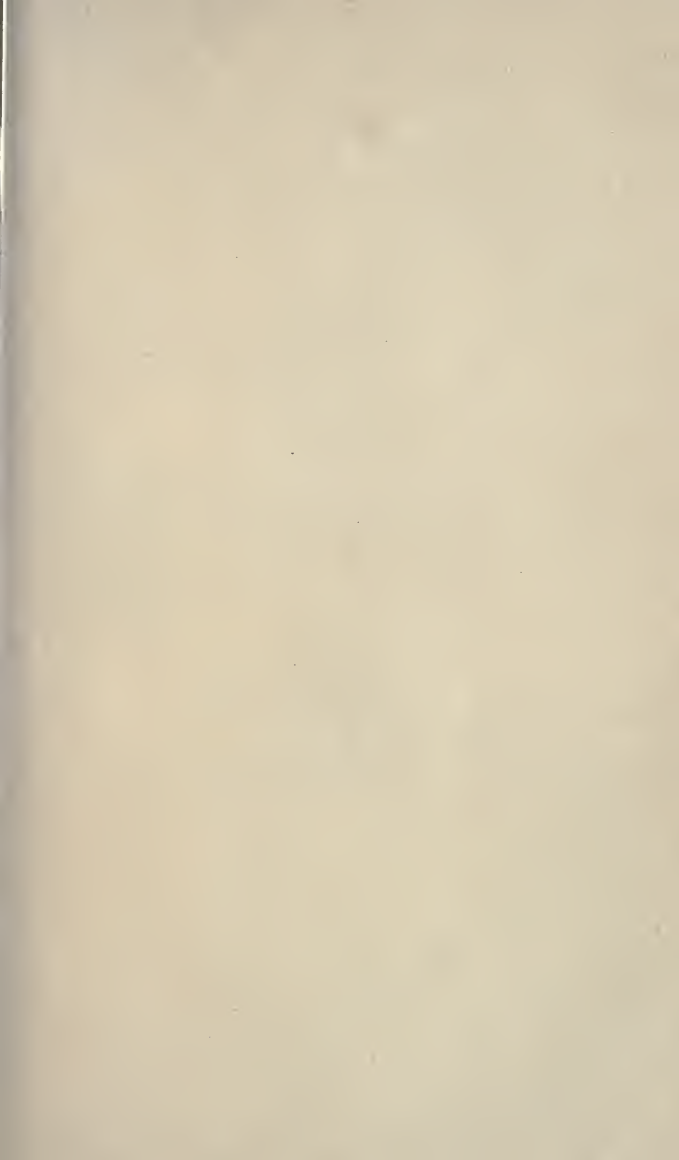
ein [ʔaɪn], Verein [fer'ʔaɪn] or [fər'ʔaɪn], but
herein [he'raɪn].

The presence of this sound is particularly noticeable in whispering.

There is no symbol for it in the current spelling; but as a general rule it occurs before initial vowels. There are very few exceptions: they comprise words compounded with particles, as herein [he'raɪn], and foreign compounds, as Adept [ʔa'dept].

Note.—It is necessary to insist again and again on the presence of the glottal stop, in the case of English pupils learning German. Germans complain that English people who know German well are often hard to understand, because they 'run their words together,' *i.e.* do not make use of the glottal stop.

The diagrams on the following pages illustrate the section on vowels. That on page 27 represents the 'vowel triangle,' and shows to what extent the lips and the tongue are used in the production of the principal vowels; it is a modification of the diagram in Prof. Victor's 'Kleine Phonetik.' The photographs on the opposite page are new; they show the position of the lips in uttering normal [i, e, a, o, u]; in English the lips are not usually rounded or retracted quite so much. The diagrams on pp. 28, 29 are taken from an article by Dr R. J. Lloyd in 'Neuere Sprachen'; they have been inserted in order to show the gradual raising of the tongue along the [a]-[i] and [a]-[u] lines.



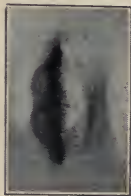
VOWEL TRIANGLE:
LIP POSITIONS.



i



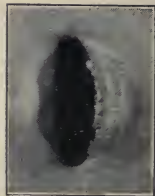
u



e

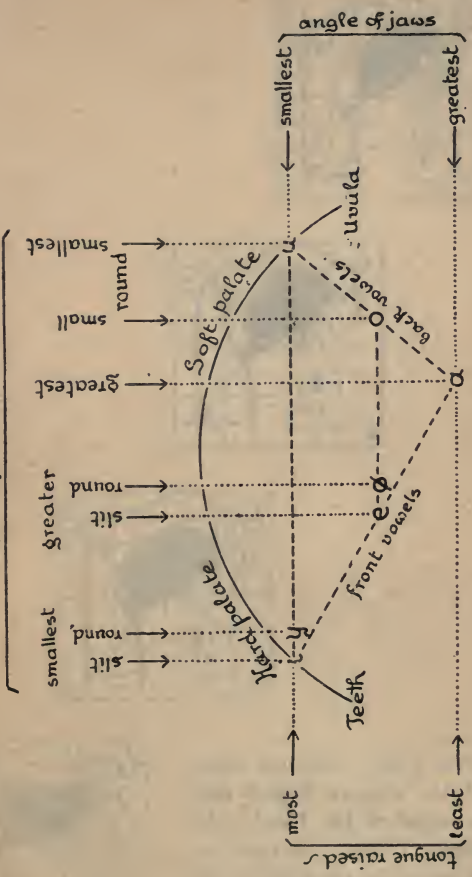


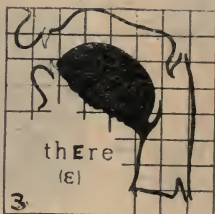
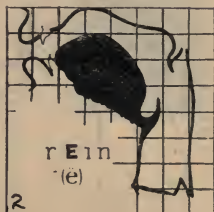
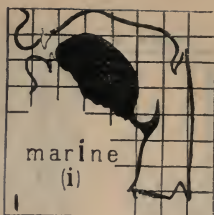
o



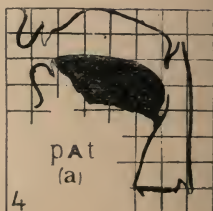
a

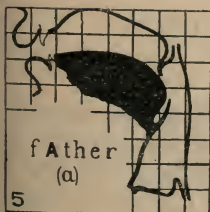
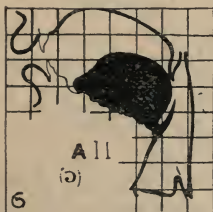
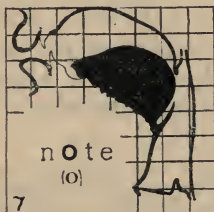
Opening of Lips French





Note.—These diagrams represent the northern English pronunciation of Dr Lloyd. In southern English the vowel of *pat* is [æ], *i.e.* the front of the tongue is a little higher.





ARTICULATION OF THE MOUTH.

Full opening of the passages.

Voiced sounds : Vowels.

§ 35. Various tones of 'voice' (resulting from varying vibrations of the vocal chords) are modified by the articulation of the mouth, which produces certain *resonances* within the cavity of the mouth.

The musical pitch of the various resonances can most easily be observed in whispering, for then there is no 'voice' blending with the resonance of the mouth.

§ 36. *The resonance of the mouth* varies according to (a) the position of the *tongue*, which may be defined relatively to two places of articulation :

the front or hard palate ; this is the *front* or palatal articulation of tongue and palate ;

the back or soft palate ; this is the *back*, guttural or velar articulation of tongue and palate ;

there is also the *middle* or *low* or medio-palatal articulation, when the middle of the tongue is slightly raised.

(b) The position of the *lips* ; these may be :

drawn back at the corners ;

protruded or rounded ;

neutral (as in breathing through the mouth).

In the case of back vowels there is generally also lip rounding ; and the higher the tongue is raised the greater is the lip rounding (*i.e.* the opening

becomes very small). If, however, there is no lip rounding, this may to some extent be compensated for by the tongue being drawn further back. The raising of the tongue in the case of front vowels is similarly accompanied by a drawing back of the corners of the mouth.

The position of the lower jaw (angle of the jaws, distance between the rows of teeth) varies, as a rule, according to the raising of the tongue.

§ 37. We can raise (1) the front or (2) the back of the tongue, until the interval between it and (1) the front or (2) the back palate is very small indeed ; so small that if they were brought any closer, the air would brush past and produce no longer a vowel but a continuant consonant. If we just avoid this we shall obtain (1) the front (or palatal) vowel 'close' [i] (diagram 1 on p. 28), and (2) the back (or guttural) vowel 'close' [u] (diagram 8 on p. 29). At the same time the part of the tongue not in action will be lowered, *i.e.* in [i] the back and in [u] the front ; and the lips will be more or less drawn back for [i] and rounded for [u]. We have therefore in [i] a tubular channel with slit opening, and in [u] a hollow in the front part of the mouth with round opening ; and so the pitch of [i] is high, and of [u] low.

§ 38. When the middle of the tongue is slightly raised we obtain the resonances for [α] sounds. In the case of 'pure' [α] (see diagram 5 on p. 29), the raising of the tongue is slightly nearer the hard palate than the soft palate.

§ 39. Between 'close' [i] and [a] there are the resonances of :

- 'open' i [i] sounds,
- 'close' and 'middle' e [e, e] sounds,
- 'open' e [ɛ, æ] and 'clear' a [a] sounds.

Between 'close' [u] and [a] there are the resonances of :

- 'open' u [ù] sounds,
- 'close' and 'middle' o [o, o] sounds,
- 'open' o [ɔ] sounds.

§ 40. *Narrow* and *wide* formation. "In forming narrow vowels there is a feeling of tenseness in that part of the tongue where the sound is formed, the surface of the tongue being made more convex than in its natural 'wide' shape, in which it is relaxed and flattened. This convexity of the tongue naturally narrows the passage—whence the name. This narrowing is produced by raising, not the whole body of the tongue, but only that part of it which forms, or helps to form, the sound" (Sweet). In ENGLISH the accented long vowels are narrow, but not as narrow as in French, or even German; the accented short vowels are wide. In FRENCH, all accented vowels are narrow. In GERMAN, the accented long vowels are narrower than in English, not as narrow as in French; and the accented short vowels are wide.

§ 41. If the tongue position of front vowels [i, e] is combined with the lip rounding of back vowels [u, o], composite sounds result :

Sweet in *English* *French* *German* *Italian* *Spanish* *Portuguese*
open " *wide*

‘close’ [y], ‘open’ [ÿ],
 ‘close’ [ø], ‘open’ [œ].

Similar, but by no means identical, sounds can be produced by a rounding of the tongue; by raising the middle of the tongue rather more than for [a]; or by combining front (*e.g.* [i]) articulation with back (*e.g.* [u]) articulation, the middle of the tongue being lowered.

PURE OR ORAL VOWELS

(Without Nasal Resonance).

Back or guttural vowels.

The u sounds :

close [u], open [ù].

§ 42. For [u] the place of articulation is further back than in the case of any other vowel. The back of the tongue is raised quite close to the soft palate, and the front of the tongue is drawn down and back. In the front of the mouth there is consequently a fairly large place of resonance, the effect of which is usually increased by the protrusion of the lips and the formation of a round opening; the rows of teeth being fairly close.

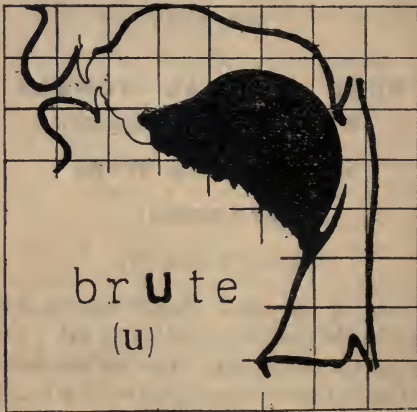
The resonance of [u] has the lowest pitch of all vowels.

The symbol [u] is generally used to designate both the close sound and the open sound (strictly [ù]).

§ 43. In ENGLISH [u] there is usually slight lip

rounding. There is no 'close' [u], generally speaking. The following are the usual [u] sounds :

The *long* [u] sound in *too* (No. 8 on p. 29 and here) begins with open or middle [u], but towards the end of the sound the lips are brought so close together that consonantal [w] results ; [tu:w] or simpler [tuw]. It is therefore not a single sound, but a diphthong.



As in the case of other long sounds, the long [u] is shortened before voiceless consonants, without, however, losing its diphthongal character : *root* [ruwt].

In syllables with little accent the first part of the diphthong is shortened and passes into a 'mixed' sound [ü]¹; but [u] may suffice to designate it: *July* [dzuw'laɪ], more strictly [dzüw'laɪ].

¹ [ü]=[u] advanced towards the middle position.

Before the 'neutral' vowel [ə] the diphthong loses its [w], and the [u:] is somewhat shortened: **cruel** [kru:əl]; the tongue is somewhat lower before r = [ə]: **poor** [pù:ə], almost [pɔ:ə]. (Even [pɔ:] is often heard.)

The same sound occurs in the so-called 'long u,' preceded by [j], which after voiceless sounds often passes into the voiceless continuant [ç] or even [ʃ]; as in **new** [njuw], **tune** [tjuwn] or [tʃuwn].

In syllables with slight accent the treatment of [juw] is like that of [uw]; in unaccented syllables we have [jü, jy, jə]: **value** [vælju] or [væljü], **regular** [regjulə], or with [—jü—] or with [—jə—].

The *short* [u] sound in **book** is open: [buk], more strictly [bùk].

Before a voiced final consonant the accented [u], as well as the consonant, is often pronounced half-long: **pull** [pul].

Unaccented it becomes [u, ü, ə], or is dropped:¹ **useful** [juwɪfəl, —fül, —fəl, —fl]; **should** [ʃud, ʃəd, ʃd].

§ 44. In FRENCH there is only close [u], and the lips are much more rounded (the opening is smaller) than in English or even in German close [u], so that it is usually accompanied by a brushing of air past the lips, which sounds somewhat like subdued whistling.

¹ Vocalic or syllabic [l].

Handwritten note: The vowel [u] is close upon the lips, and the preceding consonant, that a so-called brushing by the uttering configuration which applies to the [l].

Long [u], e.g. in **rouge** [ru:ʒ]; *short* [u] in **route** [rut].

At the end of words the u sound, or at least the end of it, is often uttered without 'voice,' but with whisper.

§ 45. In GERMAN there are two u sounds which differ in quality and quantity.

Long [u] in **du** is close, i.e. the tongue is raised as far as it can be raised without letting the current of breath rub past and produce a continuant. The lips are usually rounded, often very slightly; **du** [du:].

In syllables before or after the chief accent the sound is often shortened: **Sudeten** [zu'de:tən], **Jaguar** ['ja:ɡua:r].

Short [u] in **und** is rather more open, i.e. the raising of the tongue is not quite so great and not quite so far back, the articulation is less decided, the lip rounding weaker; **und** [ʔunt], strictly [ʔùnt].

This short [u] is also the first element of the rare diphthong **ui** [uĩ] in **pfui** [pfuĩ].

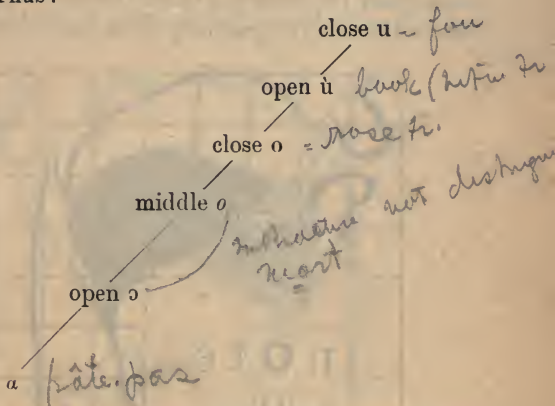
We may also describe the second element of the diphthong **au** [aũ] as a weak open [u], although an [o] sound is sometimes substituted for it.

The o sounds :

close [o], open [ɔ].

§ 46. These are intermediate between the u sounds and the a sounds, and there is no clear dividing line

in either direction. It will suffice to distinguish a middle *o* [o], half way between *u* and *a* as far as articulation of tongue and lips is concerned, a close *o* [o]— as near again to *u* as it is to *a*,— and an open *o* [ɔ]— as near again to *a* as it is to *u*. Thus:



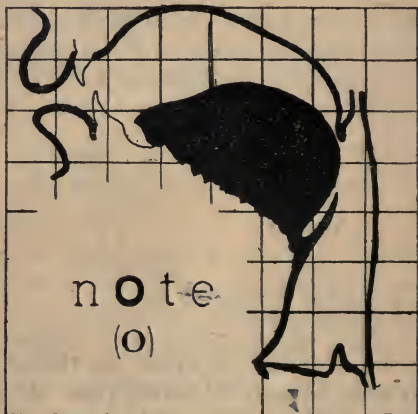
There are *o* sounds in which the raising of the tongue is more forward or backward than the regular line joining *u* and *a*.

Sounds which closely resemble a very open [ɔ] are formed by lowering the back of the tongue to the [a] position, and even lower, and at the same time drawing it back. It is convenient to treat these sounds here. They are also designated [ɔ].

§ 47. In ENGLISH there are three qualities of *o* in accented syllables: the two kinds of 'long *o*' in *no* and in *lord*, and the short sound in *not*.

in unaccented syllables they are very weak liable to lose its force

The so-called 'long o' in **no** is rather a diphthong, the first element of which is usually 'middle' o [o], though closer o also occurs. As a rule it is long [o:]; it is shortened before voiceless sounds and then becomes half long. The second element may be regarded as unaccented [ü]; but the tongue retains its [o] position, while the lips gradually reach the [u] rounding.



Thus: **no** [no(:)ü], **node** [no(:)üd], but **note** [noüt]
(No. 7 on page 29 and here).

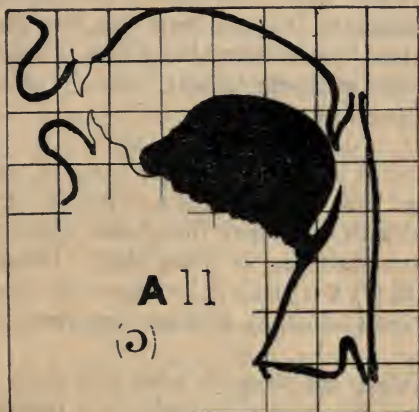
In syllables with weak accent the first part of the diphthong is a 'mixed' sound [ö]¹, and the second part is usually dropped: **fellow** [felöü, felö], **hotel** [höü'tel, hö'tel] (often with silent h). In affected speech this also occurs in accented syllables; **oh** [öü].

¹ [ö]=[o] retracted towards the middle position.

cf. English sole(-soul) soul.

When the accent is still weaker, or quite missing, we have [ö] becoming [ə]: **obey** [ö'beɪ, ə'beɪ], **innocence** [inösəns, inəsəns].

The other 'long o,' in **lord** [lɔ:d], is a 'narrow' [ɔ]-sound: the back of the tongue articulating nearer to the velum (see § 12); the lip rounding is weak. It is identical with a in **all** (No. 6 on page 29 and here),



war, or with **au, aw** in **laud, law**. This is in standard speech the only sound of **o** before **r**, if it is spoken as an **o** sound at all, and if it does not precede **rr** as in **sorry**, or **r** followed by a vowel as in **authority**. Before voiceless consonants the sound is reduced to half-long, as in **short**.

Strictly speaking this [ɔ:] is not a simple long vowel, but is followed by a faint [ə]-sound, which must not be regarded as representing

the *r*, as it occurs also where no *r* follows.— Only when *r* is final does it make its presence felt by strengthening the [ə], which then almost gives the impression of a full syllable; compare *law* with *lore*. When a vowel follows, as in *glory*, the *r* is pronounced as at the beginning of words.

When quite unaccented, this sound often passes into [ɔ], and then also into the same 'mixed' sound resembling [ö] as [oʊ] described above: **authority** [ɔ'θɔriti, ö'θɔriti¹]; or accented [ɔ:], unaccented [ö, ə].

The usual short *o* [ɔ] in **not** [nɔt] is 'wide,' as compared with long [ɔ:]; the *a* in **what** [wɔt, ʌɔt] is identical with it. Before voiced final consonants the [ɔ] becomes half-long, as in **dog** [dɔg]. Before **ss** [s], **st** [st], **th** [θ], **ff** [f], long [ɔ:] is frequently substituted for the short sound, *e.g.* in **cross**, **lost**, **cloth**, **off**.

When the accent is weak, this short [ɔ] also often passes into 'mixed' [ö]: **October** [ɔk-, ök'toʊbə]; when still weaker, we even have [ə]: **contain** [kön-, kən'teɪn]. Loss of vowel, *e.g.* in **lesson** [lesn̩].²

An open *o* sound (perhaps = [ɔ:], which is confirmed by Miss Soames and by Storm, while Sweet identifies it with [o] of [oʊ]), is also the first part of the diphthong *oi*, *oy* in **oil**, **boy**; the second

¹ The final [i] is open; it may also be written [e].

² [n̩] indicates vocalic or syllabic [n].

part is [i̯] (more strictly a sound half-way between [i] and [e] = [i̯]). Phonetic symbol [ɔ̯]; hence [ɔ̯il, bɔ̯i].

§ 48. In FRENCH the o sounds are partly close and partly open. Close o is long, *e.g.* in **rose** [ro:z], short in **côté** [kote]. Open o is long in **or** [ɔ:r], short in **robe** [rɔb].

The close sound (as we noted in French [u]) is more forward, and the lip rounding is stronger than in the first part of English [oʊ] or in German [o]. The open sound is also 'narrow,' being distinguished from the close sound, not by the muscular action being relaxed, but by the tongue being lower.

Particularly the short [ɔ] shows a tendency to pass over into the 'mixed' [ö] sound.

§ 49. In GERMAN we have a similar distinction of quantity and quality, as in the case of the u sounds (see § 45); the long o is close [o], the short o varies between middle and open [ɔ]. Thus **so** [zo:], but **Sonne** [zɔnə].

Except when it is final, [o:] is shortened to [o] (not to [ɔ]) if it precedes or follows the chief accent. Thus **somit** [zo'mit], but **also** [ʔalzo:].

Short [ɔ] is also the first part of the diphthong eu, äu (oi) in the speech of the stage; the second part is open [i̯] or [y̯], often a sound yet more open. We shall express it by [ɔi̯].

Middle or low or medio-palatal vowels.

The a sounds :

neutral [ɑ], clear [a].

§ 50. The a sounds occupy a position between the back and the front vowels.

We regard that a as 'pure' or 'neutral' in which the tongue position coincides with the intersection of the [u]-[ɑ] line and the [i]-[ɑ] line (see the diagram on p. 27), and the sound of which is equally untinged by [o] and by [e].

The articulation of [ɑ] consists of a very slight raising of the middle of the tongue ridge ; as a rule the front of the mouth is opened farther than in the case of other vowels.

Owing to this 'middle' articulation there is much scope for variety of a sounds. When the tongue is raised a little further back we obtain lower, darker sounds resembling [ɔ]; when it is raised a little further forward we obtain higher, clearer sounds resembling [æ] or [ɛ]. 'Clear' a will be designated [a], where the distinction is important.

§ 51. In ENGLISH standard speech there is the long [ɑ:] in **father** [fa:ðə] (No. 5 on p. 29 and opposite) ; and also a short sound, which is very close to neutral [ɑ], and is here designated [ʌ], as in **nut** [nʌt], etc.

The long [ɑ:] is not altogether a simple sound ; it is a half-long [ɑ] together with a faint 'mixed' sound, which is perhaps 'coronal' (i.e. containing

agrees in position with neutral, to distinguish sounds

[r], see § 70) and certainly differs very slightly from [a:]. In the case of short [ʌ] the back of the tongue is raised a little more, and there may be a raising of the front of the tongue as well, as in mixed vowels (see § 69); thus it comes that—in addition to the sound like [a]—there are varieties resembling [ə] or even [æ].



Unaccented [ʌ] passes into [ə]: **but**, accented [bʌt], unaccented [bət].

The first elements of the diphthongs in **high** and **how** may be regarded as a sounds tending to 'mixed' and even palatal [æ] articulation. The former may be designated [aĩ] (the ĩ lying between i and e); the latter [aũ] (the ũ lying between u and o).

§ 52. In FRENCH there is (1) 'neutral' [a], long in *âme* [a:m], short in *pas* [pa]; (2) palatal or clear [a], long in *rage* [ra:ʒ], short in *ma* [ma].

But as in the case of other French vowels, the difference in quantity between the long and the short sounds is not as marked as in English or German.

Both a sounds may combine with a preceding [w]; we have [wa:] in *croire*, [wa] in *crois*, [wa:] in *boire*, and [wa] in *bois* (verb). These diphthongs are usually written *oi*.

§ 53. In GERMAN both long and short a, [a:] and [a], as in *Vater* [fa:tər], *was* [vas] may on the whole be regarded as 'pure.' It is true that in the North particularly the short sound is often rather 'clear' (see above, § 50), while in the greater part of Middle and South Germany both long and short [a] tend towards [ɔ]. On the stage the tendency is rather towards [a] than [ɔ]. There is the same distinction of the long vowel with 'narrow' (taut, tense) formation, and the short vowel with 'wide' (slack) formation, as in the case of the other German vowels.

In unaccented syllables [a:] is often shortened to [a]: *Datum* [da:tum], *datieren* [da'ti:rən].

The short [a] is also the first part of the diphthongs *ei* or *ai* [aĩ] and *au* [aũ].

Front vowels, without lip rounding.

The e sounds

(including æ sounds).

Close [e], open [ɛ].

§ 54. The e sounds occupy a similar position between [a] and [i] as the o sounds between [a] and [u]. However, the [a]-[i] line representing the palatal articulations is longer than the [a][u] line representing the guttural articulations, as is indicated by the diagram on page 27; [e] therefore is further from [a] than [o] is.¹

This doubtless explains the richer development of the e sounds in English and German, as well as the existence of the symbols æ, ä beside e, as compared with the one symbol o.

The articulating part of the tongue is the front and middle of the ridge or dorsum. The opening of the lips and the angle of the jaws are smaller for e sounds than for [a], and become yet smaller the more the sound departs from [a] and approaches [i]. It is not by any means a rule that the corners of the mouth must be drawn back.

As in the o sounds, we distinguish a close [e] and an open [ɛ] beside middle [e]; when the sound is very open, and indeed closely resembles 'clear' [a], it is designated [æ].

¹ "I think the greater variety of sounds is due to the far greater mobility, adaptability and muscular activity of the front of the tongue, and also to the fact that in these articulations a small variety of position produces a more noticeable change of sound than in the case of the back vowels."—H. W. ATKINSON.

The [i]-[a] line will then be as follows :

close i *machine*

open i *fit*

close e *blé*

middle e *let see*

open e *meery*

more open æ *pat*

'clear' a *bar (z)*

a *âme*

§ 55. In ENGLISH the e sounds run parallel to the o sounds, but we note more shades of quality in the former.

To the very open o sounds correspond :

(i) the long, or commonly half-long, [ɛ:] which lies between [^{ae}a] and [e] and has 'narrow' formation ; it is always followed by [ə], which is very faint before r: *there* [ðɛ:ə] (No. 3 on page 28 and opposite), *Mary* [mɛ:(ə)ri].

There is also a less open pronunciation of the e sound in these words : [ðɛ:ə, mɛ:(ə)ri].

(ii) the short [æ], a sound more open than the one just described, and of 'wide' formation: *pat* [pæt] (No. 4 on page 28, and opposite, and see the note on p. 28).

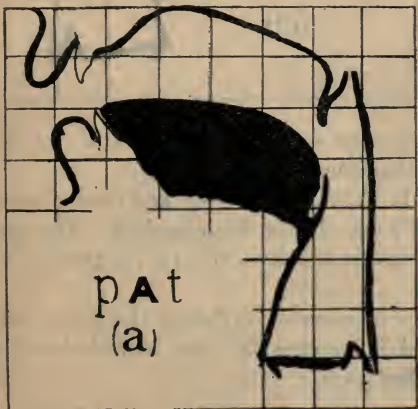
German French. German sub. in 1875



On the other hand there is no o sound corresponding to

(iii) short [e], which (in standard speech) is only middle [e] or even close: let [let, let]. =

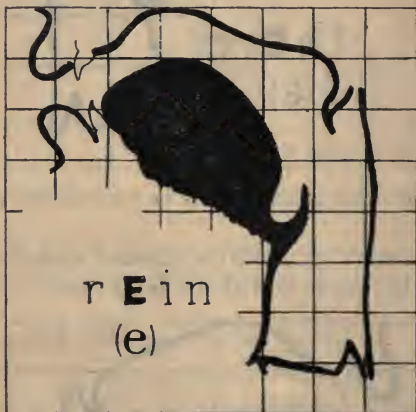
must be for London English



In unaccented syllables [æ] and [e] pass into [ə]:

	<i>strong</i>	<i>weak</i>
that	[ðæt]	ðət]
them	[ðem]	ðəm]

Parallel to the diphthongal [o:ǔ] in *no* is [e:ĩ] in *pale* [pe:ɪl] (No. 2 on page 28, and here), the second element of which is half-way between [i] and [e].



Before voiceless sounds the [e:] (like the [o:] of [o:ǔ]) becomes half-long: *late* [leɪt].

§ 56. In FRENCH the open and close e sounds (all 'narrow') are clearly distinguished. The long and short open e is usually a full [ɛ(:)]; *rêve* [re:v], *paix* [pɛ].

In unaccented syllables the sound is shortened (it becomes half-long, indeed almost short): *pêcher* [peʃe].

The close e sound is only found short or half-long : blé [ble].

The combinations of e sounds with a preceding [j], as in **bière** [bjɛ:r], **pied** [pje] are instances of what are sometimes called 'ascending' diphthongs (cp. [wa, wa] on p. 44); see § 160.

§ 57. In GERMAN the open sound occurs long [ɛ:] and short (usually only half-open): **Bär** [bɛ:r], **fett** [fɛt]. The long (accented) sound is 'narrow'; the short (accented) sound is 'wide.'

The close sound is long only : **fehlen** [fɛ:lən].

It is however more or less shortened when unaccented, as is [ɛ:] in foreign words: **Theater** [te(:)'a:tər], **plaidieren** [plɛ(:)'di:rən].

The i sounds :

close [i], open [ɪ].

§ 58. The i sounds stand in the same relation to the u sounds as the e sounds do to the o sounds.

In general, the articulation consists in bringing the middle of the tongue ridge close to the middle of the hard palate. The drawing back of the corners of the mouth is not essential, though it may be done in order to add to the clearness of the sound. If the tongue is raised so high that the slightest further raising would produce a continuant (compare close [u], § 37), we obtain 'close' i [i]; if it be lowered—along the [i]-[a] line—the sound becomes 'open' [ɪ] and approaches [e].

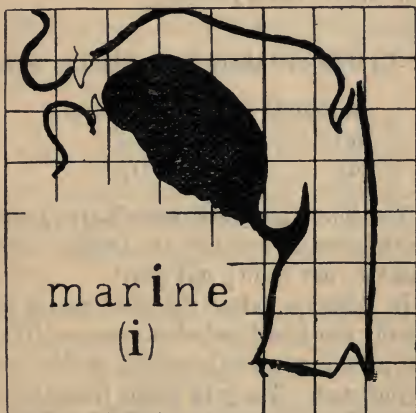
§ 59. In ENGLISH there is close parallelism between

u sounds (§ 43) and i sounds.

	[u:w]	.	.	[i:j]
(before [ə] = r)	[u:]	.	.	[i:]
	[ù]	.	.	[ɪ]

The diphthongal [i:j], as in **me** [mi:j] (see diagram

l on p. 28 and here), begins with half-open i; the tongue is then raised so that the second element is close [i] or consonantal [j]. The first element is shortened before voiceless sounds: **meet** [mijt]. The long [i:] (strictly half-long) is open; it occurs only before [ə] = r: **fear** [fi:ə].



The short i is also open: **fit** [fit], strictly [fit].

Unaccented short i is still more open; there are many shades of it, at the beginning of words and within them, which cannot be discussed here. When final, as in **very** [vere^ˆ, veri], the tongue is lowered so much that the sound approaches close or even middle [e]. The symbol for these unaccented i sounds is [e^ˆ], or roughly [i].

§ 60. In FRENCH the i sounds are close (compare French u sounds, § 44) and 'narrow.' The front of the tongue ridge articulates near the hard palate; the corners of the mouth are drawn back. The sound may be long, as in *rive* [ri:v], or short, as in *vif* [vif], *triste* [trist]. Sometimes the sound is 'half-long'; but in French the difference between this and 'short' is very slight.

§ 61. In GERMAN there is parallelism between

u sounds (§ 45)	and i sounds
[u:]	[i:]
[ù]	[ì]

The long (accented) sounds are 'narrow,' the short (accented) sounds are 'wide.' (See § 40.)
Examples: *mir* [mi:r], *mit* [mìt].

In syllables before the chief accent the [i:] is usually shortened and often becomes [ì]: *Minute* [mi:'nu:tə], or even [mì'nu:tə], which should not be imitated. The *y* in words from the Greek is variously pronounced: as [ì] (so regularly in a few thoroughly acclimatised words, e.g. *Gyps* [gips]), or as [y], which is preferred by most of the educated.

Some cells open "i" to be close of Remeuse & remain have it

Front vowels, with lip rounding.

§ 62. These sounds are found in French and German. According to the usual view they result from a combination of

the lip rounding of **o** and **u** sounds with
the tongue articulation of **e** and **i** sounds.

In the case of the German sounds, however, the tongue articulation appears to be somewhat modified: the front of the tongue is slightly lowered and helps the lip rounding.

In English these sounds do not occur. However, the guttural-palatal or 'mixed' sounds, frequently used to represent **u** in **fur** or **but**, and the unarticulated 'neutral' vowel in —**er** = [ə] both in articulation and in sound very closely approach those open [œ] sounds in which the lingual element prevails over the labial.

The ö sounds :

close [ø], open [œ].

§ 63. In general, these sounds combine the lip rounding of o sounds with the tongue position of e sounds. (In German the tongue position is modified, compare § 62.)

§ 64. In FRENCH there is close [ø] and open [œ], and both occur long and short or half-long; **creuse** [krø:z], **feu** [fø]; **peur** [pœ:r], **neuf** [nœf].

There is also a 'middle' sound between these, short and unaccented, here designated [ə]: **je** [ʒə].

§ 65. In GERMAN we notice the same distinction of the close long and open short sounds, as in the o sounds (§ 49). Long [ø] in **schön** [ʃø:n]; short [œ] in **wölben** [vœlbən] (this is rather a sound between close and open, compare short o and e).

The vowels of French words obtain the current German values in passing into that language (as in **Robe** [rø:bə], **Toilette** [to:ɑ'letə]); so here also, in the frequent ending —**eur**, French [—œ:r], the vowel being long becomes close: **Redakteur** [redak'tø:r].

The **ü** sounds :

[y] (voiceless [y̥]).

§ 66. Generally speaking, these sounds combine the lip rounding of u sounds with the tongue position of i sounds. (In German the tongue position is modified, compare § 62.)

§ 67. In FRENCH there is only close 'narrow' [y]; the lip rounding is extreme. Long in **ruse** [ry:z]; half-long or short in **durer** [dy(:)re], **culte** [kylt].

At the end of the word, before a pause, the sound loses its 'voice' after a voiceless consonant; [sy̥] for [sy] = **su**. It does not lose it entirely after a voiced consonant; [dâ] = [dy̥]. Compare [u] in § 44.

§ 68. In GERMAN short **ü** is rather more open than long close **ü**: **kühn** [ky:n], **Sünde** [zyndə].

When it has not the chief accent, [y:] is shortened: **amüsieren** [ʔamy(:)'zi:rən].

The **y** of words taken from Greek is treated like German **ü**: **Lyrik** [ly:rik], **Rhythmus** [rytmus]; but it is also pronounced as **i** (compare § 61).

Mixed or guttural-palatal vowels :

[ə].

§ 69. If in the articulation of a vowel the tongue be raised both in front (towards the hard palate) and behind (towards the soft palate), with a lowering in between, the result is a 'mixed' sound, which varies according to the relative raising of the front and back of the tongue.

These vowels occur in English and German ; but their articulation is not decided, and the impression on the ear is not clear. In French they do not occur as primary sounds at all.

is rounded in American and in French
 § 70. In ENGLISH there is such a 'mixed' sound, e.g. in the *ur* of **turn** [tɜ:n]. The tongue is practically in the [a] position, the raising before and behind the lowering being very slight. This sound is the current southern English pronunciation of certain vowels before a written *r*, which is pronounced only when before the vowel of a derivative ending or finally in 'liaison' : **err** [ə:], but **erring** [ə:riŋ] ; **her** [hə:], but **her and me** [hə:r ən mi:j].

In northern (and in some parts of southern) English the combination of vowel and *r* is pronounced as a 'coronal' ə: [ə:r] ; the point of the tongue is raised almost to the [r]-position, and the sound closely approaches [r] in value.

Another 'mixed' sound, which differs little from [ə:], is substituted for short (usually back) vowels when not accented: **ivory** [aivəri], **stirrup** [stirəp]. The sound approaches [ə:] yet more closely in those cases in which the unaccented vowel was (and in writing still is) followed by final **r**: **better** [betə].

Here also there is often transition to the 'coronal' [əʳ].

Another [ə] sound is frequently heard in place of the southern English [ʌ] sound in **but**, etc. Further, there are the first elements of [aɪ] in **high** and [aʊ] in **now** (compare § 51); and the sounds occasionally substituted for unaccented [oʊ], as in **fellow** (compare § 47), and for [ju] as in **value** (compare § 43).

§ 71. In GERMAN there is only the 'unaccented e' in syllables before or after the stem: **Gebot** [gebo:t], **Bitte** [bitə]; also in enclitics when unaccented: **es** [əs].

The whole tongue seems to be raised a little more than for [a]; the raising of front and back and lowering of middle being very slight. Following consonants often affect the sound, and it tends to [e], [a], [o], or [œ]. It may be said that in final e, the [e] element generally preponderates.

Vowels with nasal resonance, nasal vowels.

§ 72. In ENGLISH there are no nasal vowels. Words borrowed from French, if they really become part of the language, are generally pronounced in English fashion, and [ɔn] is used for [ã] and [õ], [æɪn] for [ẽ], [œn] (and perhaps [ʌn]) for [œ̃]; occasionally [o:ʊn] for [õ]. Thus *envelope* [ɔnveloʊp], *rendezvous* [rændivʊ].

§ 73. In FRENCH there are four nasal vowels, all open and with the tongue lowered. The nasal character of these sounds is so evident because the velum is lowered considerably.

- 1 Nasal [õ], written *on* or *om*, is a little closer than oral [ɔ] in *porte, morte* ;
- 3 nasal [ẽ], written *in, ein, or ain*, is more open than oral [ɛ] in *perte, mer*, it is indeed [ã̃] ;
- 4 nasal [œ̃], written *un* or *um*, is more open than oral [œ] in *peuple, peur* ;
- 2 nasal [ã], written *en, em, an, or am*, corresponds to oral [a] in *lâche*. *a little closer*

These sounds are short when final (though they may be long before an emphatic pause); before consonants they are long when they bear the chief accent, half-long with secondary accent: *e.g.* short [õ] in *rond*, long in *ronde*, half-long in *rondeau*.

§ 74. In GERMAN nasal vowels occur only in words recently borrowed from French. They seem, however, to be always long (for they are in 'open' syllables, in which German has no short accented vowels): **Ballon** [ba'lõ:], **Nüance** [ny'ã:sə], **Bassin** [ba'sê:], **Verdun** [ver'dœ:].—In northern, and partly in middle German, the native sounds [ɔŋ, aŋ, eŋ, œŋ] are often substituted: [ba'lŋ, ny'aŋsə, ba'seŋ, ver'dœŋ].

Voiceless sounds : h sounds.

§ 75. If the current of breath—without first producing 'voice'—passes through the mouth, which has already prepared itself for the uttering of a certain vowel, the slight 'friction' produced will appear to the ear as a breath [h]. There are as many varieties of it as there are of vowels: for instance [hɑ:] is really voiceless (breathed) [ɑ] followed by voiced (vocalic) [ɑ], [he:] is voiceless and voiced [e], and so on. Compare § 26.

DIAGRAMS

representing the articulation
of the tongue against the hard palate.

What is black in the following diagrams indicates those parts of the hard palate which are touched by the tongue when the vowels [i, y, e, ø, ε] are uttered. They are the results of actual experiments made with artificial palates, covered with fine powder,¹ and

¹ So Vietor; others covered the artificial palate with paint.

then inserted in the mouth; the powder being removed wherever the tongue touches. The results were obtained by Kingsley for English, by Rousselot for French, and by Viotor for German.



English.

French.

German.

[i]



French.

German.

[y]



English.

French.

German.

[e]



French.

German.

[ø]



French

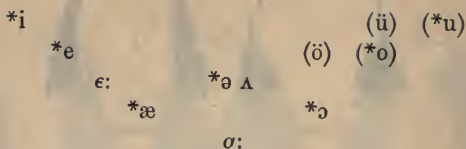
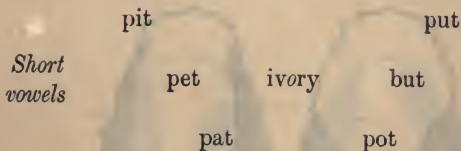
German.

[ε]

The following diagrams show the vowel schemes of English, French and German. For the [u]-[α]-[i] lines, see the diagram on p. 27. The asterisk indicates that the sound occurs both long and short. The brackets imply lip rounding.

(The antevocalic h sounds of English and German correspond in articulation with the respective vowels.)

English Vowels.

*Examples :*

Long vowels father, fall, firm
slightly diphthongal with [ɪ] bait with [j] beat
 with [ʊ] boat with [w] boot
 with [ə] bear, beer, boar, boor

Clearly diphthongal with [ɪ] file, foil ; value
 with [ʊ] foul

Triphthongal with [ə] fire, employer ; pure
 flour

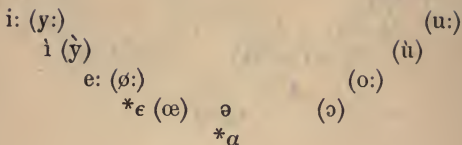
French Vowels.

*i (*y) (*u)
 *e (*ø) (*o)
 *ɛ *ẽ (*œ *õ) (*ɔ *ɔ̃)
 a
 *ɑ *ã

Examples :

	vif culte		route
	blé feu		côté
<i>Short</i>	paix neuf		robe
<i>vowels</i>	ma		
			pas
	rive ruse		rouge
	creuse		rose
<i>Long</i>	rêve peur		or
<i>vowels</i>	rage		
			âme
<i>Nasal</i>			
<i>vowels</i>	banc, bain, bon, un		

German Vowels.

*Examples :*

	mit Sünde		und
		bitte	
<i>Short vowels</i>		Sonne	
	fett wölben		
		was	
	mir kühn		du
<i>Long vowels</i>	fehlen schön		so
	Bär		
	Vater		
<i>Diphthongs</i>	drei, Frau, treu		

Articulation of the Mouth

(continued).

Narrowing or closure
of the oral passages } **consonants.**

Narrowing of the passages: **continuants.**

	PAGE
uvular r (see § 79)	68
back continuants	68
front continuants	69
<i>dentals</i> { sh sounds	72
{ s sounds	75
{ th sounds	77
{ <i>liquids</i> { r sounds (see § 101)	78
{ l sounds (see § 101)	80
<i>labiodentals</i> }	82
<i>and</i> }	
<i>bilabials</i> }	

Closure of the passages: **stops.**

ORAL STOPS :

<i>front and back</i>	87
<i>dental</i>	89
<i>labial</i>	90

NASAL STOPS :

<i>front and back</i>	91
<i>dental</i>	93
<i>labial</i>	94

Tables of English, French and German consonants	95
--	----

Consonants ; voiced and voiceless.

§ 76. When the articulation of the mouth is such that in some part of the passage through the mouth there is a narrowing or closure, then the current of exhaled breath produces a certain sound ; the resonance due to the articulation has some effect also, but it is of secondary importance.

Certain of these sounds are used for the purposes of speech ; they are the *consonants* (which also include the glottal sounds and the breath sounds, §§ 23 foll.).

§ 77. When the sound is due to a rubbing of the air as it passes (continues) through the narrowing, it is a *continuant*¹ or fricative ; if it is due to the checking of the air by means of a closure or stoppage or to the explosion caused by breaking through the stoppage, it is a *stop* or plosive (sometimes called explosive).

§ 78. When the breath has produced 'voice' (by setting the vocal chords vibrating) before it reaches the narrowing or the closure, the sound is *voiced* ; otherwise it is *voiceless*.

A sound may be 'soft,' *i.e.* weakly articulated, without on that account becoming 'voiced.' This is the case in middle and southern Germany, where the 'soft' consonants are actually voiceless.

Generally speaking we have pairs of sounds : a strongly articulated voiceless sound beside a weakly articulated voiced sound. They will be treated together in the following sections.

¹ This term is not strictly correct in the case of all sounds to which it is applied. English [w] and [j] gradually open or shut (they are 'gliding,' not 'held'), and are not continuants ; but they are fricatives.

The manner of formation may be 'narrow' or 'wide' in the consonants, as well as in the vowels (§ 40). In ENGLISH they are 'wide,' in FRENCH 'narrow,' while in GERMAN the formation is between the two extremes.

NARROWING OF THE ORAL PASSAGES. CONTINUANTS.

Uvular [R] ;

Back or guttural continuants :

voiced [g], voiceless [x] ;

Front or palatal continuants :

voiced [j], voiceless [ç].

§ 79. The narrowing here takes place between back of tongue ridge and soft palate in the *gutturals* (more strictly : postpalatals or velars) ; between front of tongue ridge and hard palate in the *palatals* (more strictly : antepalatals).

As in the sounds, already discussed, where the passage is open, it is the *ridge* or *dorsum* of the tongue which articulates, the formation of the sounds is *dorsal*.

For [x] the tongue is raised as for close [u], and for [ç] " " " close [i] ; but in each case a little higher, so that the breath brushes past.

For uvular r, designated [R], the narrowing is even further back than for [x], but it may be regarded as a variety of the latter.

Uvular r [R].

§ 80. This is the sound produced when the uvula is made to vibrate, the back of the tongue ridge being raised towards the soft palate. If there is no channel along the tongue to enable the uvula to vibrate freely, the sound becomes scraping or passes completely into [g] or [x], as friction of air takes place between the velum and the tongue ridge.—As a rule the sound is voiced, but before or after voiceless sounds, and when final, it may become voiceless.

§ 81. In ENGLISH it only occurs as a peculiarity in individuals or in dialect (it is the 'Northumbrian burr').

§ 82. In FRENCH it is the regular sound of r. In Paris and other big towns it is almost exclusively used, though theoretically the lingual r (see § 102) is preferred; in the country as a whole lingual r is more prevalent.

§ 83. In GERMAN uvular r ('Zäpfchen-r') is much used, particularly in towns, and seems to be spreading. In the speech of the stage and in singing only lingual r is considered correct.

Back or guttural continuants :

voiced [g], voiceless [x].

§ 84. By raising the back of the tongue ridge yet higher than for [u] we obtain a narrowing; the breath brushing through it produces guttural or back

continuants. The sound varies slightly according as the narrowing is further forward or more behind.

§ 85. In ENGLISH the sound [x] is not a recognised 'letter,' but even in southern speech it sometimes expresses the **gh** of the interjection **faugh** (usually [fə:]); it is becoming more and more common in the pronunciation of words taken from Scotch (*e.g.* **loch**), Welsh or German. The sound is fairly common in the popular dialect speech of Scotland and northern England.

§ 86. In (northern and middle) GERMAN the voiced [g] is used for written **g** (not final) after back vowels (*a, o, u*): **Tage** [ta:gə]. The voiceless [x], the so-called **ach-Laut**, represents the **ch** following *a, o, u*: **ach** [ʔax]; and (in northern and middle German) also the final **g** after *a, o, u*: **Tag** [ta:x].

In the speech of the stage and in southern Germany **g** after *a, o, u* is pronounced as a stop [g], finally [k]: [ta:gə, ta:k]. Foreigners need therefore not trouble to acquire the other pronunciation; see also § 123. The pronunciation [g, k] seems to be gaining ground.

Front or palatal continuants :

voiced [j], voiceless [ç].

§ 87. [j] and [ç] are in the same relation to [i] as [g] and [x] to [u].

§ 88. In ENGLISH the voiced sound is produced with so little narrowing that as a rule the brushing of air is hardly perceptible; and it is essentially gliding, not held. It occurs most frequently at the beginning of words, when it is written **y**, as in **yes**; and in the combination [ju:w], written **u**, **eu**, etc., as in **due** (compare § 43). After voiceless sounds it occasionally passes into [ç], or even [ʃ]; compare the vulgar **don'tcherknow**.



French.

German.

[ç]

See p. 60.

§ 89. In FRENCH we find [j] similarly used: for **y** in **yeux** [jø], for **i** in **vieux** [vjø]; and the voiceless sound often after voiceless consonants, as in **pied** [pje, pçe]. *also l mouille'*

As in these cases vocalic **i** sounds pass over into continuants, so French **i** in general—owing to its very close articulation—is but little removed from a continuant; and indeed for final [i] we often have [ç], which also takes its place in whispering.

§ 90. In GERMAN [j] is the j at the beginning of words : **ja** [ja:] ; but—unlike English—it is held. In northern and middle German it is used for g within words after front vowels or l, r : **Siege** [zi:jə]. Voiceless [ç], the ‘ich-Laut,’ for ch : **ich** in [ʔiç], and in northern and middle German for final g after front vowels : **Sieg** [zi:ç].

Here also (see § 86) the speech of the stage and of southern Germany adopts the pronunciation of g as a stop : [zi:ʒə, zi:k].

Teeth or dental continuants :

voiced [ʒ, z, ʒ],
 voiceless [ʃ, s, θ] ;
 liquids [r] [l].

§ 91. The dentals include sounds articulated by the point of the tongue (including what is strictly called the ‘blade,’ viz., that part of the surface which lies behind the point), and

the ridge above the upper teeth (*alveolar* continuants) ; or

the teeth themselves (true *dental* continuants).

The part of the tongue which helps to form the narrowing is

the front rim of } ^{apical} apical formation, or
 the tongue

the surface of the }
 tongue behind the } (pre)dorsal formation, or
 front rim

both combined . dorso-apical formation.

As in the case of back and front consonants, the place of articulation for most dentals is along the central line of the mouth (*medial* formation); but for the *l* sounds the narrowing is between the side rim or rims of the tongue and the side teeth (*lateral* formation).

The 'hushing' and 'hissing' sounds, or sibilants.

§ 92. These include the sounds represented in English by *s*, *z*, *sh*, etc. The characteristic 'hissing' seems to be due to a breaking of the current of breath against the teeth; the current being diffused in the *sh* sounds and concentrated on one point in the *s* sounds.

According to Dr Lloyd, the chief force in the production of English [*ʃ*] is the resonance of the fore cavity reinforcing that which comes from the hind cavity.

The hushing sounds: *more variable*
voiced [*ʒ*], voiceless [*ʃ*].

§ 93. In ENGLISH the simple voiced [*ʒ*] only occurs, where in the spelling *s* is followed by a front vowel (or by *u* = original [*ju*:]). Here it has been substituted for older [*ʒj*]: *vision* [*vizən*], *pleasure* [*pleʒə*]. The spelling is *z* in *azure* [*e:ʒə*]. The combination [*dʒ*] is much more common. This is the pronunciation of *j* in all genuine English words: *joy* [*dʒəi*], *June* [*dʒu:wn*], etc., and often of *g* before a written front vowel: *age* [*e:ɪdʒ*], etc.

The voiceless [ʃ] is usually written **sh**: **sheep** [ʃi:p], **rash** [ræʃ], etc.; also **s** (after consonants), **ss**, **c**, **t**, before front vowel (and before **u**=original [ju:]), when following the chief accent; as in **tension**, **passion**, **vicious**, **nation**. The combination [tʃ] is very common; it is usually written **ch**: **church** [tʃə:tʃ]; also **tch**: **scratch** [skrætʃ]; in some words [tʃ] has sprung from [tj]=**t** before front vowel (or before **u**=original [ju:]), when following the chief accent, as in **righteous** [raɪtʃəs], **nature**



English.



French.



German.

[ʃ]

See p. 60.

[neɪtʃə], etc. Similarly, the combination [kʃ] goes back to [ksj]=**xi** in **anxious** [æŋkʃəs], etc.

The tongue articulation of these **sh** sounds is (pre)dorsal¹ and also apical (or dorsal only) and *palatal*. There is some friction between the tongue and the gums; but that past the front teeth is more important. The lips are passive.

¹ (Pre)dorsal = dorsal or predorsal.

in German
any sounds. Grim 1829 says fricative in sh is
always present, but may be very weak.

§ 94. In FRENCH the voiced [ʒ] occurs frequently. It is written **j**, and **g** before **e**, **i** (**y**), **ge** before **a**, **o**, **u**: **jardin** [ʒardɛ̃], **loger** [lɔʒe], **pigeon** [piʒɔ̃]. — The voiceless sound is written **ch**: **chapeau** [ʃapo].

The tongue articulation is (pre)dorsal and (*post*)*alveolar*, or apical and (*post*)*dental*. The friction takes place as in English. The lips are practically passive.

§ 95. In GERMAN the voiced [ʒ] occurs only in borrowed words, mostly from the French, and retains the foreign spelling **j**, **g**: **Journal** [ʒur'na:l], **Logis** [lo'ʒi:]. For the foreign combination [dʒ] German usually substitutes [ʒ]: **Jockey** [ʒɔkɛɪ]. — The voiceless [ʃ] is common; in native words it is usually written **sch**: **Schall** [ʃal], **Esche** [ʔɛʃə], **Busch** [buʃ]. This is also the sound of **s** in German words beginning with **sp**, **st** (except in a part of northern Germany): **Spitze** [ʃpitsə], **sprechen** [ʃpreçən], **Stein** [ʃtaɪn], **straucheln** [ʃtraʊxələn]. The combination [tʃ] occurs for the **tsch** of German words, as in **Peitsche** [paɪtʃə]; also for foreign **ch**, though here plain [ʃ] is more frequently spoken: **Check** [tʃɛk, ʃɛk].

The tongue articulation is dorsal and *alveolar* or *postdental*. The friction takes place as in English. The lips are protruded.

The hissing sounds :

voiced [z], voiceless [s].

§ 96. In ENGLISH both are usually written s. The voiced sound is also written z, as in **zeal** [zi:jl]. It is s particularly when it represents an inflection, and follows a voiced sound : **wails** [we:ɪlz], **dances** [da:nsɪz]; in some monosyllables it occurs finally : **as**, **has**, **is**, **his**, **was**; and in certain verbs, whereas the substantive has voiceless [s], as **close** [klo:ʊz] and



English.



French.

[s]



German.

See p. 60.

[kloʊs], use [ju:wz] and [juws]. In many positions, e.g. after **dis-**, **pre-**, **re-** the pronunciation of s is [z] in one batch of words, [s] in the rest; as in **disease** and **disobey**, **present** and **presentiment**, **reserve** and **research**. The combination [gz] is written **gs**, and also **x** before an accented vowel : **anxiety** [æŋ'gzaɪəti], etc.

The voiceless [s] is written **s** initially : **set** [set]; it is an inflection after voiceless sounds : **lots** [lots], **bakes** [beɪks]; it also occurs after voiceless sounds, as in **gipsy**, and within the word, in most cases, even

after voiced consonants, as in **intensity**; and also after vowels (especially in words from the Latin), as in **decisive**. It is also written **ss**: **passage**, etc.; and **c** or **sc** before **e** or **i**: **cite**, **scene**, etc. The letter **x** in most cases has the value [ks]: **box**, etc.

The tongue articulation is (pre)dorso-apical (cp. § 91, towards the end), and *alveolar*.

x as dissonant *lips of tongue behind lower teeth*
 § 97. In FRENCH both sounds occur. The voiced [z] is written **z**: **zèle** [ze:l], or **s** (as a rule between vowels): **maison** [me:zɔ̃], **rose** [ro:z]. Otherwise silent **s**, **x**, **z** also have the value of [z] in 'liaison'; with this exception, **x** rarely = [z].—In all other cases **s** is [s], particularly initially: **sel** [sɛl], **estimer** [ɛstime], **Vénus** [venys]; **ss** always expresses this same sound, as do also **c** or **sc** before **e**, **i** (**y**), **ç** before other vowels, and **t** before **i** in certain suffixes.—The combinations [gz] and [ks] are also written **x**, which usually has the latter value.

alveolar *lips* *in* The tongue articulation is (pre)dorsal, and *postdental* or *alveolar*.
lips of tongue behind lower teeth

§ 98. In GERMAN **s** has the value of voiced [z] initially, and within the word between vowel or liquid and vowel: **so** [zo:], **reisen** [raizən], **Binse** [binzə], etc.—In all other cases **s** = voiceless [s] (except in initial **sp**, **st**; cp. § 95): **Skelett** [ske'let], **Erbse** [ʔɛrpsə], **List** [list], **Moos** [mo:s]; and **ss** has the same value: **reissen** [raizən], **Fuss** [fu:s], **Kuss** [kus].

The tongue articulation is (dorso)apical or dorsal, and *alveolar*.

postdental *in comparison with the French, in prenasal*

The lisping sounds :

voiced [ð], voiceless [θ].

inter. and after post d

§ 99. If an s sound is articulated, but without the formation of the channel along the centre of the tongue and without a well-formed intradental cavity, the result is a 'lisping' sound. These are not found in French or German, except as a defect of speech.

They are sometimes called interdental sounds; but it is by no means an essential of these sounds in general, or the English sounds in particular, that they should be produced 'interdentally,' i.e. with the tongue point between the teeth. Indeed as a rule the English sounds are *postdental*, the narrowing being between the tongue point (with apical articulation) and the back of the front upper teeth.

§ 100. The voiced sounds occur *e.g.* in **thou** [ðəʊ], **this** [ðis], **brother** [brʌðə]; the voiceless in **thin** [θin], **breath** [breθ]. After a long vowel the final [θ] of some substantives becomes voiced before the s of the plural: **bath** [ba:ð], **baths** [ba:ðz].

The liquids :

[r] and [l].

§ 101. These sounds differ in various points from the other 'continuants,' but may be given under this heading. According to the English, French and German system of sounds, we do not regard voiced r

and voiceless r [$r̥$], voiced l and voiceless l [$l̥$], as independent sounds, but recognise only one r and one l , which are both voiced as a rule, but may be voiceless under certain circumstances.

When there is 'voice,' the narrowing may be very slight, for even then it suffices to give the sound its characteristic resonance; the r and l thus formed have—like the nasals—very much the nature and effect of vowels. The narrowing only becomes considerable and the 'friction' obvious when the sounds are produced without 'voice.'

The r sounds :

voiced [r], voiceless [$r̥$].

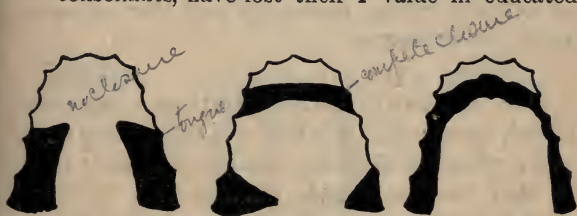
§ 102. The tongue point [r] (lingual or dental r) is produced by a narrowing between the raised tongue point and—as a rule—the ridge of the upper gums (the alveoles). The French and German r is also rolled (trilled), *i.e.* the stream of air causes the tongue point to vibrate. This is not the case in English r . (The untrilled r is strictly [$r̥$]; but [r] is usually employed for it.) The back of the tongue ridge is raised (which seems due to the raising of the tongue point), but it need not reach the [u] position. Owing to this raising in front and behind [r] is a 'mixed' sound.

§ 103. In ENGLISH alveolar (or: lingual) r , untrilled, consisting of a single tap of the tongue, or of a slight narrowing, without strong 'friction,' only occurs before vowels initially and within the word

the tip of the tongue
the tip of the tongue
into a mass - hence in 'tand.'

(for r, rr, and for rh, rrh in words from the Greek): **right** [raɪt], **very** [veri], **parrot** [pærət]; also after consonants: **grow** [gro:ʊ]. But particularly after [d] or [t] there is greater narrowing and consequently 'friction', and after voiceless sounds there is besides loss of 'voice': **dry** [draɪ], **try** [traɪ] or [tʁaɪ], but also *e.g.* **grease** [grijs] and **increase** [in'krijs] or [in'kʁijs]. These sounds approach the value of [ʒ, ʃ].

Final r, as well as r within the word before consonants, have lost their r value in educated



English.

French.

German.

[r]

See p. 60.

southern speech, their place being mostly taken by [ə], compare § 70; but for this r, as also for **ur**, **er**, **ir** the dialects have [r] sounds. In 'liaison' before an initial vowel the [r] generally appears: **better** [betə], but **better** and **better** [betər ən betə]; **here** [hi:ə], but **here** and **there** [hi:ər ən ðe:ə]. Even here it is often omitted by the younger generation in southern England.

Before [r] within the word between vowels and finally in 'liaison' there is in most cases

[ə]; sometimes not (viz., when the preceding vowel is short, or after [ɛ:] or [ɑ:] or, generally, [ɔ:]).

§ 104. In FRENCH the lingual [r], if used at all, is trilled. Like the uvular [R], which generally takes its place, it is as a rule voiced: *rire* [ri:r], *porter* [pɔrte]; final *re* after consonants is often voiceless (and dropped altogether in colloquial speech): *offre* [ɔfr̥], *sucre* [sykr̥]. The written *rr* (*rh*, *rrh*) has the same value as *r*; but in a number of words *rr* = [rr] or [r:], the rolling decreasing and then increasing again; as in *mourrai*.

§ 105. In GERMAN the lingual [r] is as a rule clearly trilled, except when it is final. It is generally voiced and produced without any distinct 'friction.' Before or after voiceless sounds, it often loses its 'voice,' partly or altogether. Finally the rolling is sometimes reduced to a single tap of the tongue (as in English initial [r]); or [ə], [ɑ], and [æ] sounds are substituted (but this should not be imitated). The written *r* and (after short vowels) *rr*, as also *rh* and *rrh*, have the value of [r] in all cases.

The l sounds :

voiced [l], voiceless [l̥].

§ 106. Here we have a narrowing between the side rims (or one only) of the tongue and the molars and side gums (*lateral* articulation); the tongue point

touching the top of the mouth somewhere along the middle line; in English, French and German it is the middle of the ridge over the upper teeth.

§ 107. In ENGLISH there is a concave lowering of the front of the tongue, and in connection with it a raising of the back of the tongue. This gives the [l] a low sound, particularly noticeable when it is final. Before and after voiceless sounds it may lose its 'voice,' as in *play*, *felt*, etc., and the friction becomes more obvious.



English.



French.



German.

See p. 60.

§ 108. In FRENCH, [l] (like French [r]) is generally voiced, but voiceless when final after a consonant: *lire* [li:r], *aller* [ale]; *table* [tabl̥], etc.—In the combinations *ll*, *ill*, *ille*, *il*, *ille* after a vowel the [j] sound ('l mouillé') is often used; rarely for l alone.

§ 109. In GERMAN [l] is usually voiced and has no obvious 'friction.' Usually the back of the tongue is lowered.

Lip or labial continuants :

lip-teeth or labiodental :

voiced [v], voiceless [f];

lip-lip or bilabial :

voiced	{	[w],	voiceless	{	[ʌ].
		[v],			[F].
		[ɸ],			[ɸ̥].

§ 110. The *labiodental* sounds are produced by the breath passing between the lower lip pressed against the upper teeth, the *bilabial* sounds by its passing between the lips.

The labiodentals and the bilabials have both a tongue articulation which is always very open, and resembles that of the following vowel: the [w] sounds have a tongue articulation like [u] or similar to it; the [ɸ] sounds have a tongue articulation like [y] or similar to it. Still, purely consonantal bilabial [v] and [F] are not rare.

§ 111. In ENGLISH the voiced labiodental [v] is usually written **v**: **very** [veri], **liver** [livə], **serve** [sə:v]. The voiceless labiodental [f] is usually written **f** or **ff**, but also **ph**: **find** [faɪnd], **differ** [difə], **philosophy** [fi'ləsəfi]. *no - f in ph*

2) There is also a voiced bilabial [w], with the tongue in the [u] position, but with rapidly vanishing and therefore indistinct friction, usually written **w**: **wet** [wet]. The corresponding voiceless sound [ʌ] is written **wh**, as in **which**; in natural southern English, however, the voiced sound is used here also, though

a) pronounced at end of log | w | u. w esp 34
 before back vowels, especially [ɔ:]

there appears to be a tendency to reintroduce the voiceless sound, which is generally used in northern English and in Scotch.—After voiceless sounds [ɱ] sometimes takes the place of [w]: **twenty** [twenti] or [tɱenti].

Both these sounds [w, ɱ] are essentially gliding, not held.

§ 112. In FRENCH there are also labiodental voiced [v] and voiceless [f]: **vin** [vɛ̃], **vive** [vi:v]; **fin** [fɛ̃], **vif** [vif].

French has further two kinds of bilabials: a [w] with lips well rounded and the tongue raised to the [u] position, as in **roi** [rwa]; and a [ɸ], also with lips well rounded and the tongue raised to the [y] position, as in **ruiné** [rɸin]. After voiceless sounds both tend to become voiceless [ɱ] and [ɸ̣], as in **point** [pwɛ̃] or [pɱɛ̃], **puis** [pɸi] or [pɸ̣i].

§ 113. In GERMAN the voiced labiodental [v] is represented by **w** in writing, also by **v** in words borrowed from Latin or the Romance languages; like all other voiced consonants in German it does not occur finally; examples: **was** [vas], **Klavier** [kla'vi:r]. The friction is much less distinct than in English and French.

In middle and southern Germany **w** is generally pronounced as a bilabial [ɸ], produced without lip rounding and without actual friction, also without raising of the tongue; it is not voiced except sometimes when it passes over

into the next sound, so that it is perhaps better designated as a weak [F].

In these parts of Germany foreign **v** is pronounced [f].

For **w** in the combinations **schw**, **zw**, (**sw**, **tw**), and for **u** in **qu**, bilabial [ʋ] is often spoken instead of labiodental [v], and in these cases both often lose some or all 'voice': **Qual** [kva:l], **Schwester** [ʃvestər] almost [kfa:l, ʃfestər], or [kva:l, ʃvestər] almost [kFa:l, ʃFestər].

The voiceless labiodental [f] is written **f** or **ff**, sometimes **v**, and **ph** (almost exclusively in words from the Greek): **fiel** and **viel** [fi:l], **laufen** [laʊfən], **Philosoph** [fi(:)lo'zo:f].

CLOSURE OF THE ORAL PASSAGES :

Stops without nasal resonance.

§ 114. As in the case of continuants, the stops (or plosives) generally go in pairs, one sound being voiced and weakly articulated, the other voiceless and strongly articulated (compare § 78). In grammars they are sometimes called 'media' and 'tenuis'; and both kinds of stops are known as 'mutes.' *voiced* *voiceless*

§ 115. In the articulation of a simple stop we must distinguish (1) the making of a stoppage, and (2) the bursting through the stoppage by the breath; we may leave out of account the momentary pause between (1) and (2). Often at the beginning of words only (2) is important, and finally only (1); for the other half of the process is slow and imperceptible. Within the word both parts are distinct.

If the pause between (1) and (2) is noticeable, the stop is 'long' or 'double.'

§ 116. The transition from a voiced or voiceless stop to the following sound, or to silence, may in either case be voiced or voiceless (aspirated). In English and German voiced stops occurring initially 'voice' comes a moment after mouth articulation (*i.e.* the sound begins voiceless and then becomes voiced); in English voiced stops occurring finally 'voice' ceases a moment before mouth articulation

(*i.e.* the sound begins voiced and then becomes voiceless); in French the voiced stops remain unchanged wherever they occur.

§ 117. In middle and southern German we notice a treatment of stops similar to that of continuants (compare § 78). In place of voiced sounds we here find weakly articulated voiceless sounds; and these are often substituted also for **p**, **t**, **k**.

§ 118. *Aspirates*,¹ *i.e.* aspirated voiceless stops, (strictly [p^h, t^h, k^h]) occur regularly in English and German before accented vowels, and often elsewhere in accented position, especially when final; in this position aspiration is not unknown in French also.

§ 119. When a stop is followed by the corresponding nasal, as in [bm, pm, dn, tn], etc., the stoppage for the first sound often remains for the nasal. Instead of the bursting through the oral stoppage we then have the lowering of the velum as the breath passes through the nose; and this is heard. This kind of stop is a 'velar' or 'faucal' stop.

¹ Continuants are sometimes called 'spirants,' and this term has been confused with 'aspirates'; perhaps mainly because in Greek ϕ , θ , χ were at first aspirates, and then passed into continuants. The Latin transliteration **ph**, **th**, **ch** suggests the earlier stage; the English pronunciation of ϕ and θ as [f] and [ð, ð] represents the later.

Back or guttural stops

and

Front or palatal stops :

voiced [g], voiceless [k].

cf Parry 185

§ 120. The stoppage is effected between the ridge of the tongue and

the back or soft palate, giving back or guttural stops ; or

the front or hard palate, giving front or palatal stops.

As a general rule, however, the distinction is unimportant ; for the difference in articulation is much less than in the case of the continuants, and the acoustic effect is practically identical. Both back and front stops may be designated [g, k] for our present purpose.

§ 121. In ENGLISH voiced [g] is usually written **g**, and also **gg** within the word and finally : **gift** [gift], **beg** [beg], **beggar** [begə], **egg** [eg] ; sometimes **gu**, usually before front vowels : **guest** [gest], rarely **gh** : **ghost** [goʊst]. The voiceless [k] is variously written, usually **c** or **k** : **keen** [ki:jn], **sick** [sik], **can** [kæn], **accuse** [ə'kju:wz], **chord** [kɔ:d], **queen** [kwi:jn], **tax** [tæks] ; also **gh** in a few words.

The place of articulation varies according to the neighbouring sounds. The [k] is sometimes aspirated [k^h] before accented vowels, more rarely when final.

§ 122. In FRENCH the voiced sound is written **g**, and **gu** before front vowels (e, i, y): **gant** [ga:], **guerre** [gɛ:r]. The voiceless [k] is never aspirated when initial or within the word; it is usually written **c** (cc), **qu** (cqu): **camp** [kɑ̃], **qui** [ki].—When there is 'liaison' of (otherwise silent) **g**, it is pronounced [k]: **long usage** [lɔ̃k yza:ʒ], **rang élevé** [rɑ̃k elve].

The place of articulation varies according to neighbouring sounds; sometimes it is very far forward indeed.

§ 123. In GERMAN the voiced sound is represented by **g**¹ (except when final) and also by **gg** (within the word): **Tage** [ta:gə], **Siege** [zi:gə], **gut** [gu:t], **Gift** [gift], **Egge** [ʔɛgə]. The voiceless [k] (aspirated—much more than in English—[k^h] before accented vowel, or after it when final) is written **k**, after a short vowel **ck**, and finally also **g**¹: **Kohle** [ko:lə], **Birke** [birkə], **keck** [kek], **Tag** [ta:k], **Sieg** [zi:k]. In foreign words there are various other spellings: **Clique** [klikə], **Accord** [ʔa'kɔrt], **Chor** [ko:r]. Notice also in German words **qu** = [kv] (compare § 113) and **chs** = [ks], for which **x** also occurs: **Quelle** [kvele], **Hexe** [heksə], **Fuchs** [fuks].

The place of articulation is usually the middle of the soft palate; but before or after 'front' sounds it is usually more forward.

¹ See however § 86 for the pronunciation of **g** as a continuant.

Teeth or dental stops :
voiced [d], voiceless [t].

Passy 184

§ 124. The place of articulation of the dental stops practically coincides with that of the dental continuants (see § 91).

§ 125. In ENGLISH the voiced [d] is written **d** (also **dd** within the word) : **do** [du:w], **adder** [ædə], **bed** [bed]. The voiceless [t]—aspirated [t^h] initially, and elsewhere, before accented vowel, and often finally—is written **t** (**tt**) : **tell** [tel], **matter** [mætə];



English.



French.

[t]



German.

See p. 60.

also **d** in the **-ed** of verbs after voiceless sounds : **tapped** [tæpt]; rarely **th**.

The articulation is usually dorsal¹ and *alveolar* ('supradental').

§ 126. In FRENCH the voiced sound is always written **d** : **dire** [di:r], **bande** [bã:d]. The voiceless [t] is not aspirated initially or within the word, and is written **t** (**tt**) : **tirer** [tire], **perte** [pert], **attendre** [atãdr̥]; in borrowed words also **th**.—When there is

¹ So Sweet; but 'apical always, except when disturbed by adjacent articulation,' Lloyd.

'liaison' of (otherwise silent) **d**, it is pronounced [t]: **grand homme** [grāt əm], **répond-il** [repōt i(l)].

The articulation appears to be usually dorsal and *alveolar*.

§ 127. In GERMAN the voiced [d] is written **d** (**dd**): **da** [da:], **leiden** [laïdən], **Kladde** [kladə]. The voiceless [t]—aspirated [t^h] initially, and elsewhere, before accented vowels, often also when final—is usually written **t** (**tt**), **th**, sometimes **dt**, and finally also **d**: **treu** [trœi], **retten** [retən], **Stadt** [ʃtat], **und** [ʔunt], **Thal** [ta:l]. The combination [ts] is often written **z** (**tz**), in foreign words also **c**: **zu** [tsu], **Satz** [zats], **Cäsar** [tse:zar].

The articulation is either apical and *pre-alveolar*, or dorsal and *alveolar*.

Sassy 183. Lip or labial stops :

voiced [b], voiceless [p].

§ 128. In general the lip stops are bilabial, *i.e.* formed by a closure of both lips.

§ 129. In ENGLISH the voiced sound is written **b** (**bb**): **but** [bat], **babe** [be:ɪb], **ebb** [eb]. The voiceless sound—aspirated [p^h] initially, and elsewhere, before accented vowels, and often finally—is written **p** (**pp**): **put** [put], **proper** [prəpə], **happy** [hæpi]; very rarely **ph**.

§ 130. In FRENCH the voiced [b] is written **b** (**bb**): **bon** [bɔ̃], **robe** [rɔb], **abbaye** [abei]. The voiceless

[p] is written **p** (**pp**): **point** [pwē], **troupe** [trup], **frapper** [frape].

§ 131. In GERMAN [b] is written **b** (**bb**), and does not occur finally: **bei** [bāi], **aber** [ʔa:bər], **Ebbe** [ʔɛbə]. The voiceless [p]—aspirated [p^h] initially, and elsewhere, before accented vowels, and often when final—is written **p** (**pp**), finally also **b**: **Paar** [pa:r], **Rappe** [rapə], **ob** [ʔəp].

In the combination [pf], as in **Pferd**, **Kopf**, the [p] is often formed labiodentally, *i.e.* by pressing the lower lip against the upper teeth.

Stops with nasal resonance :

nasal stops or nasals.

§ 132. The stoppage is practically identical with that of the 'oral' or 'pure' stops [g, k], [d, t], [b, p].

While the latter are momentary sounds, in the case of the nasals the breath can pass freely through the nose, and they can consequently be continued as long as continuants or vowels.

As a rule they have 'voice.'

Back or guttural nasal :

[ŋ],

and front or palatal nasal :

[ɲ].

§ 133. In ENGLISH the place of articulation of [ŋ] is the same as for [g, k]—*viz.*, the middle of the soft palate, except before front vowels, when it is further

Pary 192

forward, roughly speaking, at the line between soft and hard palate. It is written **ng**, and **n** before **g** [g] and **k** [k]: **long** [lɔŋ], strictly [lɔŋ:], **singer** [siŋə], **finger** [fiŋgə], **think** [θiŋk]. Within the word **ng** is either [ŋ] (**singer**) or [ŋg] (**finger**) (or [ndʒ] (**strange**)). Before voiceless sounds [ŋ] often loses its 'voice,' at any rate towards the end, as in **length** [leŋθ].

§ 134. In FRENCH [ŋ] is not recognised as an independent sound. But there is a palatal nasal [ɲ], never formed further back than the line between hard and soft palate; it is often followed by [j], becoming [ɲj]. It is written **gn** (when final, it is always followed by **e**): **régner** [reɲe], **Cologne** [kɔləɲ]. It sometimes becomes voiceless before voiceless sounds, as in **enseignes-tu** [ãsep'ty]. By assimilation we obtain the guttural nasal sometimes, as in **une longue main** [yn lɔŋ mɛ̃].

§ 135. In GERMAN [ŋ] is written **ng**, and also **n** before **k** and—in foreign words—**g**: **lange** [laŋə], **lang** [laŋ], **denken** [deŋkən]. In foreign words **g** before **n** is sometimes pronounced [ŋ]: **Agnes** [ʔaŋnes], **Signal** [ziŋ'na:l]; better [ʔaɲnes, zi'ɲna:l].

In northern German the French nasal vowels in borrowed words are often pronounced thus: [aŋ] for **an** and **en**, [eŋ] for **in**, [ɔŋ] for **on**, [œŋ] for **un**. In southern and middle German and on the stage the French vowel is usually retained. See above, § 74.

Teeth or dental nasal :

[n].

§ 136. In ENGLISH [n] the stoppage is the same as in English [d, t]. Before and after voiceless sounds, as in **hint**, **sneer**, [n] often loses its 'voice' in part. It is written **n** (**nn**): **nine** [naɪn], **manner** [mænə].

§ 137. In FRENCH [n] the stoppage is the same as in French [d, t]. It is written **n** (**nn**): **neuf** [nœf], **tourner** [turne], **bonne** [bɔn]. Long, or double, [n] is pronounced in 'learned' words, **inné** [in:e, inne]; and in proper names.

When final and before a consonant (except **n**) the **n**, together with a preceding vowel, indicates a nasal vowel; but in 'liaison' the [n] appears, in which case the vowel is less strongly nasalised: **un** [œ̃], but **un ami** [œ̃n ami], almost [œn ami]. Often the preceding vowel is then not regarded as nasal at all, and [yn ami] is pronounced.

In foreign words final **n** often has the value of [n], as in **amen** [amen], **hymen** [imen]. Rarely there is a nasal vowel within the word before a vowel or before a second **n**, as in **enivrer** [ānivre] (also [anivre]), **ennui** [ānuɪ]. Sometimes [n] loses its 'voice' before or after voiceless sounds: (**je**) **ne sais pas** [n se pa], **hanneton** [antɔ̃], **des tenailles** [de tɛnɑ:j].

§ 138. In GERMAN [n] the stoppage is the same as in German [d, t]. After voiceless sounds it loses its 'voice' wholly or in part. It is written **n** (**nn**): **nein** [naɪn], **nennen** [nɛnən].

Lip or labial nasal :

[m].

§ 139. In ENGLISH [m] is bilabial, like [b, p]. It is written **m** (**mm**): **my** [maɪ], **summer** [sʌmə], **name** [neɪm]. It loses its 'voice' towards the end—compare [ŋ] and [n]—before voiceless sounds, as in **lamp** [læmp].

§ 140. In FRENCH [m] is bilabial. It is written **m** (**mm**): **mon** [mɔ̃], **blâmer** [blɑ:me], **ferme** [ferm]. In some 'learned' words and proper names **mm** is pronounced as a 'double,' *i.e.* long, sound: **immortel** [im:ɔrtel]. It serves to indicate a nasal vowel, like *n*. Before a second **m** there is sometimes a nasal vowel, as in **emmener** [ãmne]; and final **m** has the value [m] in foreign words and proper names: **Jérusalem** [ʒeryzalem], **album** [albəm]. Voiceless [m̥] is the rule in certain combinations, such as **sme: prisme** [prism̥]; it also occurs occasionally elsewhere: **monsieur** [m̥sjø], **hameçon** [am̥sɔ̃], (perhaps it is here rather [mm̥]). *among notes also § 510 e*

§ 141. In GERMAN [m] is bilabial. It is written **m** (**mm**): **mein** [maɪn], **kommen** [kɔmən], **ihm** [ʔi:m]. It may become partly voiceless after initial **sch** [ʃ], as in **Schmerz** [ʃmerts], or in foreign words after **s**, as in **Smaragd** [sma'rakt], or **t**, as in **Tmesis** [tme:zis].

	<i>lip-</i>	<i>teeth</i>	<i>teeth</i>	<div style="display: flex; justify-content: space-between; align-items: center;"> front — of tongue — back </div> <hr style="width: 100%; border: 0; border-top: 1px solid black;"/>	<i>vuvula</i>	<i>glottis</i>
--	-------------	--------------	--------------	---	---------------	----------------

ENGLISH :

<i>continuants</i>	w ʌ	v f	ð θ	j ç		h
			z s ʒ ʃ			
<i>liquids</i>			l r			
<i>stops</i>	b p		d t	g k		
<i>nasals</i>	m		n	ŋ		

FRENCH :

<i>continuants</i>	w ʌ	v f		j ç		
	ʔ ũ		z s ʒ ʃ			
<i>liquids</i>			l r			R
<i>stops</i>	b p		d t	g k		
<i>nasals</i>	m		n	ɲ		

GERMAN :

<i>continuants</i>	ʋ f	v f		j ç	g x	R	h
			z s ʒ ʃ				
<i>liquids</i>			l r				
<i>stops</i>	b p		d t	g k			ʔ
<i>nasals</i>	m		n	ŋ			

	<i>lip-</i>	<i>teeth</i>	<div style="display: flex; justify-content: space-between; align-items: center;"> front — of tongue — back </div> <hr style="width: 100%; border: 0; border-top: 1px solid black;"/>	<i>vuvula</i>	<i>glottis</i>
--	-------------	--------------	---	---------------	----------------

Faint, illegible text covering the majority of the page, likely bleed-through from the reverse side of the document.

SOUNDS IN CONNECTED SPEECH.

The Basis of Articulation	PAGE 98
-------------------------------------	------------

The Sounds in their Relation to each other :

Fundamental properties	101
Length	104
Force	111
Pitch	123
Sonority ; Formation of Syllables	126
Influence of other Sounds ; Assimilation and Dissimilation	129

SOUNDS IN CONNECTED SPEECH.

§ 142. So far we have considered each sound separately. If, however, we consider all the sounds of a language, comparing them with all the sounds of any other language, we find that there is something characteristic ^{in the way the same sounds} in the mode of articulating them. We might say, that they all presuppose the same *basis of articulation*; and this we shall have to determine for each language. Again the sounds of a language do not occur separately, but as members of little groups, which again form the units of larger groups; and we must examine the '*timbre*,' *length*, *force* and *pitch* of each sound, as compared with other sounds; as well as the relative *sonority* (audibility), which plays an important part in the formation of *syllables*. Finally we shall consider the changes of a sound which result from its *position*, according as it is influenced by a preceding or following sound, or by both.

The Basis of Articulation.

§ 143. We can only suggest the various bases of articulation by showing in what respects those of other languages differ from our own.

Strictly speaking there is no uniform basis of articulation for all English speaking people, nor for Frenchmen, nor for Germans, just as the pronunciation is not uniform; we shall therefore single out the speech of educated natives of London, Paris and Berlin, which will enable us to notice some characteristic differences.

§ 144. The FRENCH mode of articulation is more definite, more 'narrow'¹ than ours: the tongue is in general much further forward in the mouth. The lips are very active: they are strongly rounded or protruded, or the corners of the mouth are well drawn back; and the mouth is smartly opened. The timbre of the voice is bright and clear; and there is enough modulation to make us easily distinguish the musical intervals. The exhalation of breath is more uniform than in English (or German), and indeed tends to increase in force as it goes on.

Hence there are no 'wide' vowels, in particular no wide [u], [i] and [y] sounds (for the half-wide weak [ɑ], [o], [e] and [ø] sounds, compare § 166); also no 'wide' consonants. On the other hand the [d, t] sounds and [z, s] sounds are further forward than in English, the [d, t] sounds being 'apical' instead of 'dorsal'; the [l] is also further forward and has a clearer sound than ours; and front [ɲ] takes the place of back [ŋ].—A further peculiarity is the nasalising of certain vowels, the passage to the nose not

¹ For 'narrow' and 'wide' as applied to vowels, see § 32; as applied to consonants, see § 67.

being closed by the velum ; and the presence of uvular [R].

§ 145. In GERMAN the tongue is on the whole not quite so forward in the mouth as in French. The mode of articulation is between that and the English: it is more definite and precise than our own, which appears indolent to French and German ears. The lips are also distinctly more active than in English ; the angle of the jaws is greater. The expiration is fairly uniform ; and there is more modulation of the voice than in English.

Hence there are more rounded vowels, and there is less variety of indefinite (neutral) vowels. The [d, t] sounds and [z, s] sounds are further forward ; the [l] is also further forward, and has a clearer sound than ours ; the [ʃ] is strengthened by protrusion of lips. A further peculiarity is (at any rate in middle and northern Germany) the frequency of front and back continuants ; and the presence of uvular [R].

THE SOUNDS IN THEIR RELATION TO EACH OTHER.

Fundamental properties.

§ 146. We distinguish three fundamental properties of the sounds of speech: *length* (duration, quantity), *force* (stress, emphasis, 'dynamic' accent), and *pitch* (intonation, 'musical' accent).

When the formation of a sound is perfect, the force of the expiration is identical with the force of the mouth articulation; there is an 'equilibrium of the active and reactive forces of articulation' (Techmer). In order to maintain this equilibrium, long sounds are as a rule more tensely (firmly) articulated than short sounds, *i.e.* the long are narrow, the short are wide. Again, when the expiration is strong, the pitch is higher; when the expiration is weak, the pitch is lower. Still, as deviations from the normal inter-relation of these fundamental properties are not uncommon, length, force and pitch are best considered separately.

§ 147. If we regard the sounds in the speech of an individual as a whole, it will depend on their length whether he speaks fast or slowly ('drawls'); it will

depend on their force, whether he speaks in a loud or low ('inaudible') voice; it will depend on their pitch, whether he speaks in a high or in a deep voice. A clear and distinct speech depends on all three, but principally on the force with which the sounds are uttered.—The peculiar character of each voice (which enables us to distinguish individuals by their speech) is largely due to the quality of the larynx, and partly due to the basis of articulation (see § 142).

§ 148. Connected words are uttered in *bars of speech*, according to the length and force of each expiration.

When the bars depend on the length of the exhalation, they are also called *breath groups* (French 'groupes de souffle,' German 'Atemtakte' or 'Atemgruppen'); the line of separation between two consecutive groups (or bars) lying between the end of one expiration and the beginning of the next.

When the bars depend on the force of the exhalation, they are called *stress groups* (French 'groupes de force,' German 'Nachdruckstakte or -gruppen'); the line of separation between two consecutive groups lying at a point where the stress, after falling to a minimum, begins to rise again.

In practice the breath groups and stress groups cannot always be considered separately; they may either coincide or not; and further, there is variety in the usage of individual speakers. The division of connected speech into groups (or bars) is therefore to a large extent subjective, depending on each individual; ex-

cept in so far as these groups coincide with sentences or clauses (or even single words) which are separated by pauses (of breath, and at the same time logical; usually indicated in writing by means of punctuation).

Designation :

§ 149. The length of sounds is here indicated by the addition of [:]; the force of sounds is generally only indicated where a syllable has the chief stress, here by ['] preceding the first sound of that syllable.

The pitch of sounds is sometimes indicated by [/] for rising and [\] for falling tone, [Λ] and [V] representing combinations of these.

The general tone of voice is sometimes indicated by [Γ] for a high and [L] for a low voice. The rate of speech and the degree of loudness is not usually indicated.

The 'groups' are in some transcriptions separated by a vertical line [|]; in others the words are either not separated or separated by hyphens [-], and blank spaces are left between the groups.

LENGTH.

§ 150. For general purposes it will suffice to use the old, purely relative, distinction of *short* sounds, *e.g.* [u], and *long* sounds, *e.g.* [u:]; now and then we shall also require the term *half-long*, indicating length intermediate between 'short' and 'long.'

Although the term 'length' or 'quantity' is generally applied to vowels only, we find differences in length in the case of consonants also, including even the stops (sometimes called 'momentary' sounds).

§ 151. The length of a stop is the time that elapses between the formation of the closure and its opening. Only when the stop is at the beginning of a word can we really say that the sound is 'momentary'; for in this case the formation of the closure is not audible, and the sound as such does not come into existence until the closure is opened. On the other hand, we may (it is not essential) produce a stop at the end of a word without any audible opening of the closure; in that case the sound as such results from the formation of the closure, which is audible when it follows another sound.

Long stops easily give the impression that they are double sounds, especially owing to the fact just mentioned, that under certain circumstances the

formation of the closure by itself and the opening of it by itself may have the value of a stop, and also to the fact that in long stops the closure is usually opened with increased force.

Long liquids, etc., also give the impression of being double when there is an increase of force in the course of their production; see the examples in § 155.

Vowels.

§ 152. In ENGLISH the rules for the quantity of vowels are, according to Sweet:

Long vowels only occur in syllables with strong stress (rarely where stress is not quite strong); finally, e.g. [ə:] in **err**, **fur**, and before voiced consonants, e.g. [ɑ:] in **hard**, [ɔ:] in **all**. Except these three [ɑ: ɔ: ə:] there are no simple long vowels; they are followed by [ə], or by [w] (in the case of 'long u'), by [j] (in 'long e,' as in **seen**), by [ʊ] (in 'long o'), by [ɪ] (in 'long a,' as in **pale**). The second element of these diphthongs shares the length of the first, so that in the [u:w] of **who**, the [i:j] of **he**, the [o:ʊ] of **rode**, and the [e:ɪ] of **pale**, each element is half-long.¹

Before voiceless sounds the long vowels [ɑ: ɔ: ə:], as well as the diphthongs [u:w i:j o:ʊ e:ɪ] are reduced to half-length; and in syllables which have not the

¹ The mark over [ɪ] and [ʊ] must not be taken to indicate that the vowel is short; it implies that the vowel is unable to bear a syllable, that it is a *voyelle consonnante*, not a *voyelle syllabique*.

chief accent they are also half-long, or short. Examples : [ɑ:] in **hart**, [o:ŭ] in **wrote**, [ɔ:] in **almighty**.

When a 'short' vowel precedes a final voiced consonant, it often becomes half-long (and the otherwise 'long' consonant also becomes half-long); *e.g.* **bad**, **his**.

In slow and emphatic speech the final [eː] in **pity**, **steady**, etc., and sometimes the [ə] in **better**, etc., are half or quite long.

Accented *short* vowels occur in final syllables (or in monosyllables) before voiceless consonants, as in **bat**, **hiss**; often also in other than final syllables, as in **better**, **natural**, etc. Unaccented short vowels are very common.

The relative value of 'long' and 'short' vowels in English has not yet been satisfactorily determined.

§ 153. In FRENCH the following rules have been given by P. Passy :

Vowels are *long* in syllables with chief accent (before a pause) before the voiced continuants [r z ʒ v j]; *e.g.* [ɛ:] in **faire**, [y:] in **ruse**, [ɑ:] in **nage**, [i:] in **rive**, [œ:] in **feuille**; similarly where -je is added to a verb with final vowel, as in **dis-je** [di:ʒ]. The sounds [ɑ o ø], and the nasal vowels are long before other consonants also. But before the consonant sound due to 'liaison' the vowel is not lengthened: **pas ici** = [paz isi] with short [ɑ]; in the same way, **méchante** is [meʃã:t], but **méchant et vilain** is [meʃãt e vilẽ] with short [ã].—Before consonants that are not voiced continuants the other

4 phonemes identical to the French ones but differ from Passy

vowels (except [e]) are rarely long, even when a pause follows. All final vowels are also *short* as a rule.

§ 154. In GERMAN the vowels of accented syllables are long or short.

The *long* vowels (except [a:] and [ɛ:] they are all close) occur finally, with or without accent, *e.g.* [a:] in **ja**, **da**, **Emma**. The only final vowels that are short are the unaccented [ə], and [a] in interjectional **na**, **da**, **ja**. The vowels are long also before a single consonant or before a combination of consonants which could begin a word, *e.g.* [i:] in **ihr**, **Mitra** (the syllable is *open* when a vowel follows the consonant(s), as in **ihrig** = **ih-rig**, **Mitra** = **Mi-tra**). It is less common for a vowel to be long when a combination of consonants follows which could not begin a word, *e.g.* [o:] in **Mond** (then the syllable is *closed* and remains so even when a vowel follows the consonants: **Mon-de**; in many cases, however, such syllables were open in an earlier stage of the language).

In syllables with secondary accent, virtually long vowels become half-long or even short, *e.g.* [e] in **Sekretär**, [i] in **Militär**.

Accented short vowels, which were short also in the earlier stages of the language, as [ɛ, ɔ], are almost confined to 'closed' syllables, and are 'open' sounds.

In the ordinary spelling the consonant is doubled after a short vowel within the word, and often finally, as in **füllen**, **satt**; and the length of a vowel is often indicated by adding **h**, by doubling the vowel, or—

sometimes in the case of *i*—by adding *e*: *Mehl*, *That*, *Saat*, *dieser*, etc.

The relative duration of German 'long' and 'short' vowels has been variously estimated; it naturally differs according to dialects and even individuals.

Brücke obtained the proportion 5:3, *Kräuter* 3:2, Ph. Wagner (Reutlingen dialect) 3:2.

Vietor's measurements of his own speech (Nassau) gave the following results:

Relation of long to short 2 (average 0.3 second): 1 (average 0.15 second); and he arrived at the following results, taking this scale: 0.1 second, over-short; 0.15 second, short; 0.2 second, half-short; 0.25 second, half-long; 0.3 second, long; 0.35 second, over-long.

The 'long' vowels are—I. 'over-long' in final syllables with the chief stress before a pause (1) when not followed by a consonant, (2) when followed by a single consonant (or by a liquid and a consonant); II. 'long' (*a*) in syllable with chief stress (1) when the syllable is final and the vowel is followed by a combination of consonants, (2) in the last syllable but one, or in a syllable that was formerly 'open,' and (*b*) in the syllable following a syllable with chief stress and 'over-long' vowel; III. 'half-long' (*a*) in syllable with chief stress, preceding the last syllable and ending in a combination of consonants, (*b*) in the syllable following a syllable with chief stress and 'long' vowel; IV. 'half-short' if in a syllable preceding the chief stress.

The 'short' vowels are—I. 'half-short' in syllables with chief stress (1) in last syllable before a single

stop, (2) in last but one before a double (*i.e.* long) stop; II. 'short' (*a*) in syllables with chief stress, (1) in last syllable when no consonant follows, (2) in last but one, or in a formerly 'closed' syllable, (*b*) unaccented, final *e* [ə]; III. 'over-short': accented in last syllable, before liquid or liquid and consonant.

The diphthongs are on the whole treated like the long vowels.

Consonants.

§ 155. In ENGLISH there is a marked difference between long and short consonants. According to Sweet, all those final consonants are long (or half-long) which follow an accented short (or half-long) vowel, *e.g.* [p] in **map** [mæp], strictly [mæp:], [t] in **hit** [hit], strictly [hit:], [s] in **us** [ʌs], strictly [ʌs:] [z], in **is** [iz], strictly [iz:], etc. There may be several voiced consonants, but the effect on the first of them is the same: **build** is really [bil:d], **lands** [læn:dz].

Long consonants also occur where words are closely connected or compounded, as in **wild duck**, **ripe pear**: here the formation of the closure is the 'first **d** (**p**)' and the opening of it is the 'second **d** (**p**)'; or in **slim man**, **full list**, **with them**: here the sound gains a fresh value through an increase of force, and the consonant becomes 'double,' or the [m, l, ð] are simply lengthened. In somewhat careless speech the simple consonants are substituted.

§ 156. In FRENCH (according to Ph. Wagner) the consonants are long or over-long before a pause, the quantity of the preceding vowel being immaterial.

*→ French
penetrate
gru*

In cases like *mont(ent) tous, la nett(e)té, là d(e) dans*, the [t:, d:] are over-long, and long when they are some distance from the final syllable of the group, as in *le temps d(e) transmettre* (d(e)t = [t:]). Long also is the initial [s:] in *sais pas* (for *je ne sais pas*), and [t:] in *temps en temps* (for *de temps en temps*). In cases like *illégal, illusion, etc., and irrité, irrégulier, etc.*, there appears to be no lengthening (Ph. Wagner). Rousselot gives the following rules as the result of his own experiments:

Stops are a little shorter than continuants. Voiced sounds are often shorter than voiceless sounds. The length of the consonants is in inverse proportion to the length of the word. There is an 'accent of time or duration' which lengthens certain consonants.—The 'doubled sounds' are single consonants with greater force and double length.

§ 157. In GERMAN the length of consonants (especially continuants, including nasals) is to some extent affected by their position; *e.g.* [m] is short initially, but long when it is final and follows an accented vowel.

Long consonants also occur (as in English, compare § 155) when words are closely connected or compounded; *e.g.* *mitteilen, Packkorb* and *Tauffeier, Baummeise, Stilleben*. Here, too, the simple consonants are substituted in careless speech.

84

FORCE.

§ 158. The sounds and small or large groups of sounds in ordinary speech are not uttered with uniform force; there is either a decrease [$>$] (decrescendo) or an increase [$<$] (crescendo) in the force with which the breath is exhaled; and the force with which the consonants are articulated (*i.e.* the force employed for forming a 'narrowing' or 'closure') usually decreases or increases in the same proportion (see § 146). We can therefore distinguish various degrees of force if we compare the parts of a sound or of a group of sounds. This is more easily done if we whisper the sound or sounds, as our ear is then not confused by the addition of 'voice.' Accurate results can obviously be obtained only by mechanical methods.

§ 159. Differences in the force of exhalation are most important in the case of **vowels**. A relatively greater or greatest degree of force is called *accent* or *stress*; the vowels concerned are *accented* or *stressed*.

§ 160. If we take *the accent of a syllable*, we can investigate the nature of this accent; and, if the syllable contains more than one vowel, we must determine which has the stronger accent. If the

first of two vowels has the stronger stress, the diphthong is 'descending'; if the second, the diphthong is 'ascending' (see § 56); and 'level,' if they have the same accent. The symbol for level stress is [=].

§ 161. We determine *the accent of a word* by finding out the vowel in it which has the chief (principal, strongest) stress; the other vowels either have secondary stress, or they are unaccented. In accordance with this, we distinguish 'strong,' 'half-strong' and 'weak' syllables. When several syllables have the same accent there is 'level stress.'

When a language shows a wide range between the extremes of 'strong' and 'weak' expiration, the unaccented vowels tend to change into the indefinite vowel sounds [ə], etc. On the other hand, there is considerable variety in the force of the secondary accents; and the formation of compound words is easier.

§ 162. There is further the *accent of the sentence*, obtained by ascertaining the most strongly pronounced vowel of the sentence; and there are also secondary accents of varying force.

§ 163. This stress of words and sentences serves to emphasise certain ideas; it is 'emphatic' accent. This explains why the accent of the word must yield to the accent of the sentence. Some words (enclitics and proclitics) lose their stress under certain circumstances.

§ 164. The force of expiration is a matter of some importance in the case of **consonants**. It generally

depends on the degree of force of the expiration possessed by the preceding or following vowel at the moment when the two sounds meet.

Among the consequences of strong expiration are: the change or 'shifting' of voiceless stops to aspirates and affricates, *e.g.* [p] to [p^h] and [pf]; the shifting of voiced sounds to voiceless sounds, *e.g.* [b] to [p]; the development and retention of distinct [h] sounds; the development and retention of the glottal stop (compare § 32); partly also the retention of final 'unaccented e.'

§ 165. ENGLISH. Taking first the accent of the *syllable*, we find that generally the diphthongs are 'descending' or decrescendo diphthongs: [aɪ] = i, [aʊ] = ou, [ɔɪ] = oi, [o:ʊ] = o, [e:ɪ] = a, etc.

In the *word* also the accentuation is usually descending; the chief accent falls upon the syllable which is logically the most important, *i.e.* the stem syllable, which usually comes first in the word. This principle has been adopted even in the case of foreign words; compare the native **holiness** ['ho:ʊlinis] and the foreign **memory** ['meməri]. In unaccented syllables an original a, o, u, and also er, etc., regularly becomes the 'neutral' vowel [ə]: **Arab** [ærəb], **almoner** [ɑ:mənə].

There are many *compound words*; frequently they are separated in writing. The rule used to be that the chief accent was on the first part [>]; according to Sweet the following now holds good, if we consider the accentuation of compounds with regard to their meaning: level stress [=] contrasts, and uneven

stress ([>], less frequently [<]) unites the ideas expressed by the compound words.

Hence (according to Sweet) there is level stress (*a*) in the combination of substantive and substantive, the first having attributive force: **steel pen**, **garden wall** (but > in the case of natural objects when the two ideas have become blended into one: **butterfly**, **blackbird** (but **black bird** with =)); similarly compounds with **street** have > accentuation, but those with **road**, **square**, etc., =); (*b*) adjective (or adverb) and adjective: **good-looking**, **twenty-five**; (*c*) inseparable compounds in which the second part has a clearly marked meaning: **undo**, **thirteen**; (*d*) interjections: **hallo**, **bravo**; also in the foreign **amen**; (*e*) foreign names: **Berlin**, **Chinese**.

The > accentuation is found: (*a*) when the compound denotes a casual relation, an action or a natural phenomenon: **rainbow**, **walking excursion**, **earthquake**; (*b*) in an otherwise = compound, if it is employed as an attribute before a substantive: **thirteen men**.

The < accentuation is found (*a*) in 'constant' combinations of substantives with **of**: **bill of fare**; (*b*) in title and name: **Mr Smith**; (*c*) in forms of address: **good morning!**

There is often aspiration of initial and final voiceless stops before and after the vowel which bears the chief accent; thus **two** [t^hu:w], **not** [nɒt^h].

Initial [h] is weak, and often in danger of being lost; it regularly disappears, even in educated speech, in the 'weak' forms of certain monosyllables (see § 29).

The final 'unaccented e' has long been lost; and the final [ə], even where it is not = **er, or, etc.**, in uneducated speech often takes a [r] sound: **idea of** [aĩdi:ər əv]. This is now sometimes heard even in educated speech.

Enclitics are common; here **a, o, u** (and sometimes other vowels) are reduced to [ə]. This leads to numerous pairs of ('strong' and 'weak') forms: **and** [ænd] and [ənd] or [ən], **from** [frəm] and [frəm], **us** [ʌs] and [əs], etc.

The accentuation of the *sentence* has also a logical basis. But—particularly in educated speech—there is not a very great range between the extremes (chief accent and no accent), so that sometimes subject and predicate (or even subject, predicate and object) appear to have the same accent, and the sentence appears to have = rather than < accentuation (which is clearly the case in attributive adjective and substantive). The syllables with secondary accent very often become quite unaccented.

Where there is a contrast, a strong accent is regularly employed to mark the contrasted words.

There is, besides, a distinct tendency to *rhythmic* accentuation in polysyllables, in compounds, and in the sentence.

§ 166. In FRENCH the accent is far less strongly marked than in English; and the tendency as regards its movements is directly opposed to the Teutonic.

In the *syllable* there are the 'ascending' diphthongs [wa, wa] = **oi**, [je] = **ie**, [wě] = **oin**, [jê] = **ien**, etc., with < accentuation.

these unaccented vowels
 change more readily into
 than in French

In the *word* there is the same ascending accentuation; the last sonorous syllable bears the stress; **jamais** [ʒa'mɛ], **pardonne** [pardɔ'ne], **considération** [kɔ̃sidera'sjɔ̃]. This is the rule in theory; but in practice other influences frequently cross it. The first, or some other earlier, syllable ^{sometimes} usually has a secondary accent, which becomes particularly obvious to the ear when it is combined with a higher pitch of the voice. It is not uncommon for this accent to have greater force even than the normal accent of the word; this is especially the case when the last syllable but one is long: thus **baron** is ['ba:rɔ̃] rather than [ba:'rɔ̃], and **beaucoup** is ['bo:ku] rather than [bo:'ku].

We find very much the same influences at work in the *sentence*. The rhetorical element is far more important than in English; and the *rhythmic* tendency is very marked. For instance, in **le roi Jean** the accent is on **Jean**, but in **le roi Théodoros** the syllables **roi** and **-ros** are accented.

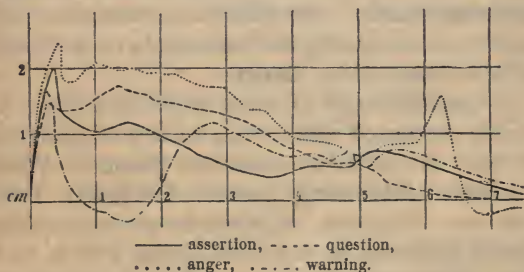
Where there is a contrast the accent shifts to the syllables which mark it: "se **soumettre** ou se **démètre**," with strong accents on **sou-** and **dé-**.

The absence of accent causes long vowels to be reduced to half length (*e.g.* **raser** and **raser**), and changes the short [ɔ, a, e, ɛ] to sounds approaching [ə], as in the vowels preceding the accent in **comment**, **mardi**, **méchant**; when the syllable is weaker still these vowels (as also [ø] and [œ], and occasionally others) actually become [ə], as in **peut-être**, **déjeuner**. This [ə], unless its position preserves it, may drop out altogether (as

[ə] of *le* in *je le dis*); on the other hand when it is accented it may become a full [œ] (as *e* in *dis-le*). —Consonants also frequently disappear in weak syllables; thus in ordinary conversation the *l* of *il* is dropped before a consonant. Instances of ‘strong’ and ‘weak’ forms are, *e.g.* *le* [lə] and *la* [la] before consonants, and *l’* [l] before vowels.

§ 167. In GERMAN there is mainly > accent in the syllable as well as in the word.

The accent of a long vowel in an ‘open’ *syllable*



(*e.g.* *du*) has been ascertained by means of the cymagraph. The results are shown in the accompanying diagram, which gives the characteristic curves for the word *du* according as it is pronounced in a tone of (1) assertion, (2) question, (3) anger, (4) warning.

The diphthongs [aɪ] = *ai*, *ei*, [aʊ] = *au*, [ɔɪ] = *eu*, *äu* are accented on the first element.

In the *word* (in almost all cases where it is really German) the accent is on the stem syllable, which is

logically the most important, and—as in English—this is the first syllable in simple (uncompounded) words: **Héiligung**, **árbetete**; exceptions: **Forélle**, **Holúnder**, **Hornísse** (but also **Hórnisse**), **lebéndig**, **Wachólder**; also **luthérisch**. There is a secondary accent on the second syllable of **Élènd**, **élènd**; both [pe:lent]. Foreign words usually retain their original accent: **Dóktor**, pl. **Doktóren**, **Hotél**; old loan words, or foreign words that are much used, receive German accentuation: **Fénster**, **Dútzend**, **Kógnak**. Foreign suffixes, *e.g.* **-ei**, **-ieren**, **-ur** are accented, even when they have been added to German stems: **Betteléi**, **hausíeren**, **Glasúr**. The foreign accentuation is also found in the originally Slavonic names in **-in** of some north German towns: **Berlín**.

The accent varies in some words which are frequently contrasted with certain other words that have the same or similar terminations: **Síngular—Plúral**, **Ínfanterie—Kávallerie**, instead of **Singulár**, **Infanteríe**, etc. Similarly, an otherwise quite unaccented syllable may receive the chief accent, if it is to be particularly emphasised, especially for purposes of contrast: **gégàngen** [‘ge:gaŋən], **nicht vérgàngen**.

There is a greater range between the extremes (chief accent and no accent) than in English. The syllables with ‘chief accent’ are very strongly marked. On the other hand the unaccented vowels have in many cases passed into ‘unaccented e,’ *i.e.* [ə]. The great range of accentuation makes it possible to have much variety of force in the secondary accents; hence German lends itself particularly well to the formation of long compounds.

The first element of *compound words* usually has the chief stress, as being the determining word, as in **Sónntagshèiligung**; the accent in **Jàhrhúndert** follows the same logical principle. Level stress is much less common: **stéinréich**; it usually indicates that the two parts of the compound are logically equal.

Ascending accent is found in the following cases:

In substantives: (*a*) in words like **Hòhepriester** (for **hohe Priester**); (*b*) in geographical names and in names of festivals, etc., the first part of which is an adjective or a genitive: **Nèuwíed**, **Èberswálde** (but **Kárlsbàd** and some others); also **Nòrdóst**, etc.; and **Gründónnerstag**, **Frònléichaam** (**Fron** originally 'of the Lord'); (*c*) in many compounds, the second part of which is itself a compound and 'heavier' than the first part: **Òberfòrstmeister** (but **Óberfòrster**); (*d*) in compounds which have the chief accent far from the end: (sometimes) **Lànderíchtsdírektór**, as though it were **Land + Gerichtsdirektor** (compare (*c*)), and not **Landgerichts + Direktor**.

In adjectives: (*a*) in words like **bàldmòglich** (for so **bald wie möglich**), and in derivatives like **hòhepriesterlich**; (*b*) when the first part is **all-** (giving emphasis): **àllgeméin**; (*c*) when the first part is **alt-**, and the second refers to a nation or country; **àltíndisch** (but usually **áltdeútsch**, and **áltfrànksch** in the sense of **áltmòdisch**); (*d*) in several adjectives in **-lich** and **-ig** (in most cases the middle syllable is 'heavy'): **àbschéulich**, **bàrmhérzig** (in some the accentuation varies, e.g. **absichtlich**, **armselig**); (*e*) **un-** + verbal adjective: **ùnhórbar**; (*f*) in **lèibéigen**, **vòllkómme**n, **wíllkómme**n; also in **àusgezéichnet**.

In verbs: (a) with *miss-*: *míssbráuchen* (*míssdeúten* is rare); (b) with inseparable *voll-*: *vòllénden*; (c) with inseparable *durch-*, *hinter-*, *über-*, *um-*, *unter-*, *wider-*: *dùrchdríngen*, *hínterbríngen*, *ùbersétzen*, etc. (in the verbs with separable and accented *durch*, etc., the prefix is still distinctly adverbial; thus *dùrchdríngen* = *durch dríngen*, *hindurch dríngen*).

In particles (instead of level stress): *bèrgáuf*, *vòrhér*.

Level stress is found in the following cases:

In substantives: (a) in names like *Héssen-Nássau* (for *Hessen und Nassau*), but here frequently <; (b) in compounds with *Erz-*, where this prefix merely serves to give emphasis and has lost its original force (= Greek *archi-*): *Érzschélm* (but *Érzbíschòf*); (c) in long compounds, the two parts of which are themselves compounds: *Rèalschùlóberlèhrer*.

In adjectives: (a) when the first part merely serves to emphasise the second: *stéinréich* (see above); (b) when the word is so long that one accent seems insufficient. *únwíederbrínglich* (but also *únwíederbrínglich*).

The accentuation of particles is usually =, but sometimes becomes < or >, owing to the rhythm of neighbouring words: *bèrgáuf* and *bèrgáuf*; *wéitáus*, *wítáus*, and *wéitáus*.

Such variation occurs in adjectives also: *er ist stéinréich*, but often *ein stéinrèicher Mann*. On the other hand words naturally accented > or < may receive level stress if they are strongly emphasised: *eine fùrchtbáre Kálte* (*Kálte*); in such cases > may also become <; in the last example we might also have *fùrchtbáre*.

These are examples of a tendency to *rhythm*; as other instances we may take words like **Landgerichtsdirektor** and **Realschuloberlehrer** mentioned above.

Owing to the force of the word accent, the voiceless stops initially before, and finally after, an accented vowel pass over into aspirates: **Kind** [k^hint^h], **tot** [t^ho:t^h], **Pack** [p^hak^h]. The force of the accent also explains the energetic initial [h], as in **Halt** [halt], **hier** [hi:r], and the retention of the glottal stop: **echt** [ʔeçt], **alle** [ʔalə]. This applies to the secondary no less than to the chief accent: **Schösskind** with [k^h], **Ánhàlt** with distinct [h], **únècht** with [ʔɛ].

Words often lose their accent in the sentence; and some (enclitics and proclitics) have 'strong' and 'weak' forms according to the force of the accent: **er** = [ʔe:r] or [ʔɛr] or [ʔər] or even [ər]; **der** = [de:r] or [dɛr] or [dər], etc. An extreme case of this is the complete loss of words, e.g. **Mórgen!** for **guten Mórgen!**

In the *sentence* we observe an accentuation which obeys very much the same principles as that of the word. Often the 'bars' of a sentence (see § 148) coincide with the words, and then have > accentuation. But taking the sentence as a whole the < (crescendo) is the rule; for the subject usually goes before the predicate, and it is the predicate which, as a rule, supplies the 'determining' element of the sentence and therefore has the chief accent, while the subject usually has a secondary accent: "**ich schreibe,**" "**der Hund bellt,**" "**er ist kránk.**" If the predicate has an object, then the object is the 'determining'

word, and therefore has the chief stress of the sentence: "**ich schreibe einen Brief.**" In compound tenses, in inverted clauses, and in secondary clauses, the accentuation changes also, and < becomes > or < >. The attributive adjective has a rather weaker accent than the word to which it belongs: "**die kindliche Liebe**" (but "**die Liebe der Kinder,**" "**zu den Kindern**"). Where there is a contrast, the emphasis on the contrasted words counteracts the usual tendencies of sentence accentuation: "**ist er krank (oder sie)?**"

PITCH.

§ 168. All voiced sounds necessarily have a certain musical *pitch* (or intonation); and, though this is most important in the case of vowels, the term 'voiced sounds' here, as usually, includes voiced consonants.

In ordinary speech the voice does not remain for any appreciable time on one note, but is continually gliding to a higher or lower note. If we dwell on each separate sound, giving it a uniform musical value, speech becomes a recitative or a song.

§ 169. *Uniform* tone does indeed occur in speech, especially in the short vowels; we here have to distinguish at least three varieties, a *high* tone [—], a *middle* tone [—] (or no symbol), and a *low* tone [—].

But far more frequent—not only in the sentence or in polysyllables, but also in the syllable—is *rising* [/] or *falling* [\] tone, and of compound tones the commonest are the *rising-falling* [^] and the *falling-rising* [v].

These terms correspond very roughly to the actual facts. The musical interval between the highest and lowest note in a case of a rising or falling tone may be of very varying length; and it may not be a simple rising or falling, but a series of rises and falls, which can only be

accurately determined by mechanical means, the human ear being unable to distinguish more than the general result of these infinite variations of pitch.

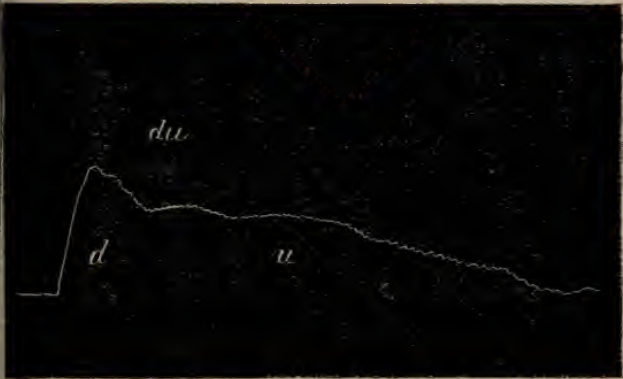
Apart from the intonation of the sentence we must take into account the *tone of the voice* as a whole, which may be high [Γ], middle, or low [L]; in the case of women and children the tone of voice is higher than in men (see § 10, note 3).

§ 170. In ENGLISH the simple rising or falling tone has the same value as punctuation in written speech. The falling tone is used for making or confirming a statement; the rising tone asks a question or prepares for the making or confirming of a statement; in the second part of an alternative question there is falling tone. The compound tones on the other hand usually serve to express various states of emotion; the rising-falling tone suggests stubbornness or surliness, and we use the falling-rising tone in order to give a warning. Certain monosyllables, such as **yes**, **no**, **hm**, **oh**, etc., may represent a whole sentence, and the intonation of that one sentence will be crowded into the tone in which the monosyllable is uttered.

The range between the highest and lowest note varies according to the dialect of the speaker, his temperament, and the particular emotion to which he is giving expression. It may be as much as two octaves in the same syllable; sometimes the most important members of a sentence do not differ by

more than half a tone, or are even quite of the same pitch.

The following diagram is a facsimile of the *cyfiographic* representation of *du*, showing the waves of sound. *wave*



§ 171. In FRENCH the intonation is more musical; the notes are clearer and the intervals more distinct. In the use of falling and rising tone, etc., French agrees on the whole with English; the compound tones are particularly common. The average pitch of voice is higher than in English.

§ 172. In GERMAN the intonation is very similar to our own. There is rather more variety of musical tone; and the average pitch of the voice is higher, though not as high as in French.

Parry
129 - 141
100 - 110.

SONORITY ; FORMATION OF SYLLABLES.

§ 173. The degree of *sonority* which a sound possesses, or in other words the distance to which it will carry, depends on various factors : whether there is ' voice ' or not ; whether the ' voice ' is the more or the less important part of the sound—which again depends on the accompanying resonance or noise (friction, etc.) ; and if there is no ' voice,' whether the noise is more or less distinct—which depends on the articulation employed.

§ 174. The vowels possess sonority in the highest degree ; for they are voiced, have resonance, and the passage through the mouth is free. As the passage is widest for [a], this sound has greater sonority than any other. Then come the voiced liquids and nasals ; they are voiced sounds with resonance and with no great narrowing of the mouth passage, or with free passage through the nose, the mouth being closed. After these are the voiced, and then voiceless continuants and stops ; the voiceless [s, ʃ] being particularly marked owing to their sharp sound.

§ 175. In sounds otherwise identical there may be varying degrees of sonority according to the force of expiration, the pitch, the length (especially in the case of vowels), and the energy of articulation (in the case of consonants).

§ 176. According to its sonority a sound is more or less distinctly audible. The least sonorous, viz., [k, t, p], could not be heard even at a short distance; [g, d, b] carry a little further, and so on. Sounds that are weak in this respect may become more distinct if associated with more sonorous sounds; and thus the vowels, being most sonorous of all, are not only themselves audible at a very great distance, but can also make a number of preceding or following sounds carry far.

§ 177. Apart from their own sonority, they therefore form a kind of support for weaker sounds: they may be said to carry the *syllable*. The term 'syllable' is also applied to an isolated vowel, or to a vowel standing beside other vowels equally sonorous, sometimes also to other sonorous sounds. If a syllable-carrying vowel has had as much as it can bear joined on to it, the rest is dropped, unless it can obtain the help of some auxiliary vowel, or unless it possesses sufficient sonority to become a syllable itself (compare French esprit). *e e + s prothesis e. women to her*

As a rule, it is vowels that 'carry' the syllables; but this can also be done by liquids and nasals (not, however, in syllables with chief stress, in English, French and German, except perhaps in interjections like the German brr [br]), and by the voiceless [s, ʃ], also in interjections: [pst], [hʃ], etc.

§ 178. A consonant between two vowels usually, but not always, belongs to both syllables. It is impossible, therefore, always to divide off the syllables according to their pronunciation; and

*1) if sparrow - épouse etc. due to sonority so
saw ad es for. but la sponse. fo Ribbon
quite correct*

where the exigencies of writing or printing demand it, we often find inconsistencies. Thus we divide **lead-ing**, but in German it is **lei-dend**; the pronunciation of the **d** being the same in each case, as it belongs to both syllables, the closure to the first, the opening to the second.

If, however, there is a change of force, *i.e.* a weakening and then again a strengthening of pressure in the current of breath, we can be in no doubt as to the division between the syllables; for here it coincides with the change of force. Thus the **d** in English **ado** or German **Geduld** belongs to the second syllable.

INFLUENCE OF OTHER SOUNDS.

Assimilation and Dissimilation.

§ 179. Initial sounds are often influenced by the sounds which follow, final sounds by those that precede, and sounds occurring within the word by those on both sides. In dealing with the resulting changes, we must take into account that a sound may begin or end a written word, and yet not be treated as an initial or final sound, because it is *within* a breath group. In **I saw Tom and Jack** *d* is the final of **and** if we consider the word by itself; but if we take it as part of the breath group, we can no longer regard it as a final.

§ 180. The general rule is, that when two sounds come together, those movements of articulation which are common to both are executed once only, as far as that is feasible (Winteler).

§ 181. Sometimes certain movements of articulation are made a little sooner or kept up a little longer than the sound really requires, and this somewhat modifies a preceding or following sound (or even sounds).

Thus a sound may become voiced (or voiceless) through the influence of neighbouring voiced (or voiceless) sounds; a sound may be 'mouillé' (palatal-

diphthongising of original long vowels which is still in progress ([e:ĩ] in **day** is going on to [e:ĩ, æ:ĩ, a:ĩ]).

Final accented vowels are long or diphthongal: **ah, day**; unaccented [i] or [e^ː] and [ə] may also then be lengthened: **steady ! never !**

§ 183. In FRENCH the *place* and *manner* of articulation is also influenced by a following [r]; and the *duration* too, as in **fer, mort, heure**, except in -er with liaison, as in **premier âge**. The sound [v] has a similar effect to [r]: **fleuve**; [z] and [ʒ] lengthen vowels: **ruse, neige**; so do [r] and [v] in certain cases, without producing any other change: **lire, prouve**. Sometimes a vowel is changed owing to the anticipation of a following front vowel, the front of the tongue being lowered too soon, as in [etɛ], a common pronunciation for [etɛ] = **était**, or being advanced too soon, as in [ʒœli] for [ʒœli] = **joli**.

When [u], [i] or [y] ends a word within a breath group, and before a vowel, it usually changes to [w], [j] or [ɥ], e.g. [i] in **qui est là ?** An [ə] in the same position is dropped, as also the [a] of **la**; in writing this is, as a rule, only indicated in the case of **la**, and in the monosyllables **me, le**, etc.

Other unaccented vowels also disappear now and then.

The [ə] may be retained in order to avoid the clashing of three consonants, e.g. in **porte bien** [pɔrtə bjɛ̃].

Final vowels are short (**amie** in pronunciation = **ami**), though a little longer than short vowels preceding consonants.

Some give an example of **totti = truit**. Some think it due to the rule of **curse** (ie paratal "j").

§ 184. In GERMAN most long vowels undergo a change in the *place* of articulation when followed by **r** = [r (ʳ, ɐʳ, ɐ)]. In conversational German the close [e] and [o] sounds become more open, as in **her**, **vor**; and the long [i, y, ø] become somewhat deeper and duller, as in **mir**, **für**, **Stör**.

The short vowels are little affected by [r]. On the other hand their quality depends very much on the following consonants, which bring the vowel to a sudden close. This is particularly obvious before a final consonant, as in **ab**, where there is often no separate consonantal sound at all, the impression of a consonant being produced by the peculiar way in which the vowel is brought to an end.

There are no accented vowels at the beginning of German words; the glottal stop always precedes.

With the exception of [a] in the interjections **da**, **ja**, **na** and of 'unaccented e' = [ə], all final vowels are long: **ja** [ja:], **Anna** [ʔana:], **Juni** [ju:ni:].

Consonants.

§ 185. In ENGLISH there is often assimilation of the *place* of articulation. Thus in [k, g] the closure is effected at various points of the tongue ridge and palate, as in **lack**, **lick**, or **log**, **leg**. Frequently [s] or [z] becomes [ʃ] before [ʃ], as in **this sheep**; there is partial assimilation in the change of [s] to [ʃ] before [j], as in **this year**. Sometimes a nasal is partially assimilated to a following sound; thus [n] may become [ŋ] in **can go**.—Most of these changes are confined to rapid colloquial speech.

The *manner* of articulation is variously affected by neighbouring sounds. When two identical stops meet, as in **coat-tail**, only one is spoken, and it is long only in emphatically distinct speech. Such combinations as [t] + [d], as in **sit down**, are often reduced to a simple sound also, the second sound being preferred as a rule. When two different stops come together, *e.g.* [k] + [t], as in **acting**, the second closure is usually made before the first is opened; this opening being then unaccompanied by an explosion. In cases like **open**, the [n] closure is made before the explosion of the [p]. When the stops [t] and [k] are followed by [l], as in **atlas, clean**, they often explode laterally, *i.e.* the opening is at the sides only. When three consonants come together, the middle sound often disappears, as in **jumped, acts** (in careless speech); particularly when a related nasal precedes and follows a stop, as in **don't know**.

Voiceless stops are aspirated before accented vowels; but there is no aspiration when another sound precedes the stop, which is closely connected with it; compare **take** and **stake, peak** and **speak**.

Assimilation of voiceless to voiced, and voiced to voiceless, sounds is a marked feature in the inflection of substantives and verbs; note the [d, t] in **lagged, lacked**, and the [z, s] in **bids, bits**. The plural forms in [vz], *e.g.* **loaves**, and in [ðz], *e.g.* **baths**, are similar cases.

Before and after voiceless sounds, the liquids often tend to lose their 'voice' partially, as in **plot, pelt**.

When voiced consonants occur initially they are usually voiceless at the very beginning; and when

they occur finally they become voiceless at the very end; **zeal** almost = [szɛ:jl], **is** almost = [izs].

Final **r** is, as a rule, preserved by 'liaison'; compare **there** and **there is**, and see § 103.

§ 186. In FRENCH the difference in the *place* of articulation of [k, g] is more marked than in English; compare **cas** with 'guttural' [k] and **qui** with 'palatal' [k].

In the *manner* of articulation French shows features which differ from our own. When two identical stops, e.g. [tt], come together they are pronounced long. When different stops meet, e.g. [kt], each has its own explosion, as in **acte**.

When there is voiced + voiceless consonant or voiceless + voiced consonant, we usually find progressive assimilation, i.e. in the first case both become voiceless, e.g. [bs] becomes [ps] in **absolu**, and in the second case both become voiced, e.g. [sg] becomes [zg] in **second**.—Liquids and semi-vowels tend to adapt themselves to a preceding voiceless sound, e.g. [pi, pj] becomes [pç] in **pied**.

Before a nasal consonant [b, d, g] are often nasalised, especially if a nasal vowel precedes; e.g. [d] becomes [n] in **point de mire**. — (sight on gun) — born

Initially we find long consonants as the result of contraction; thus [d + t] becomes [t + t] and then [t:] in **de temps en temps**.

Finally the liquids [l] and [r], following a consonant, lose their 'voice' and are often dropped, as in **peuple, chambre**. Emphasis may lengthen a final consonant, e.g. [l:] in **seul**!

at regular intervals in both

Many otherwise silent consonants are preserved by 'liaison'; e.g. [t] in **petit à petit, attend-il**. The [l] of **il** is—in ordinary conversation—only retained in 'liaison'; compare **il a** and **il va**. Inconvenient combinations of consonants at the end of words are sometimes made easier by the addition of [ə], as in **reste**.

§ 187. In GERMAN the effects of assimilation are very similar to those in English.

Owing to a difference in the *place* of articulation we distinguish **ch** [ç], as in **ich**, and **ch** [x], as in **ach**. (Compare also the treatment of **g** in **lagen, liegen**, when it is pronounced as a continuant [la:gən, li:jən].) The stops [g, k] also vary according to the next vowel sound, as in **kund, Kind**.

A [p] before [f], as in **Pferd**, is occasionally labiodental; and [s] is sometimes assimilated to [ʃ] as in **Hausschlüssel**. These changes are, however, confined to rapid colloquial speech; as also the assimilation of nasals in cases like **Anbau, glauben**, which become [ʔambaʊ], [glaʊbm], or **Unkunde, merken**, which become [ʔʉŋkundə], [mɛrkŋ].

As far as the *manner* of articulation is concerned, German agrees with English in the following cases: [t] + [t], as in **not thun**; [t] + [d],¹ as in **hast du**; [k] + [t], as in **Akte**; [t] + [l] and [k] + [l], as in **Bettler, Gaukler**.

When there is a stop + related nasal, the explosion of the stop in the oral passages is usually replaced

¹ Here [t(:)] and [d(:)] are both frequently heard.

by the opening of the velum, *i.e.* by a nasal (or velar, faucal) explosion (compare § 119).

When there is nasal + related stop and consonant, the middle sound is often lost, as in **pump**te, especially if the third sound is a related continuant, as in **Lanze** [lan(t)sə].

German agrees with English in the aspiration of stops before accented vowels; compare [t^h] in **Tier** and [t] in **Stier**.

In a great part of Germany **g** is a voiced continuant between vowels, as in **lagen**, **liegen**; in some parts **b** also, as in **leben**.

The assimilation of voiceless sounds to voiced neighbouring sounds is regarded as incorrect, but is often found, *e.g.* **ss** in **Wasser**, **Strasse** is pronounced [z]; the opposite is more frequent, *e.g.* [ps] for [pz] in **Absicht**. Liquids before or after voiceless sounds, as in **kalt**, **klein**, lose their 'voice' partially or altogether.

A nasalising—due to a premature lowering of the velum—is often found in words like **Signal**, when **gn** = [ŋn] instead of [gn].

When voiced consonants occur initially, they are usually voiceless at the very beginning; thus so almost = [szo:].

The only voiced consonants which occur finally are [l, m, n, ŋ, r]; hence **d** in **Land** is [t], though in **Lande** it is [d]. The same applies to the consonant ending a syllable, before a suffix beginning with a consonant; therefore **b** in **liebte** (and in **lieblich** also, though there is some variation here) = [p], while in

lieble it is [b] because l here belongs to the stem of the word. In lieb' ich we have [b], for it is not really final, inasmuch as it is within the breath group; but here we may also have [p], if the two words are spoken slowly and distinctly.

Rules as to the pronunciation of French or German words will be found in the following books, which are warmly recommended to teachers and students:—

Abrégé de Prononciation Française (Phonétique et Orthoépie). Par PAUL PASSY. Leipzig, Reisland. 1897. 1s.

German Pronunciation, Practice and Theory. By WILHELM VIETOR. Leipzig, Reisland. 1890. Paper covers, 1s. 6d.; cloth, 2s.

Die Aussprache des Schriftdeutschen. Von WILHELM VIETOR. Leipzig, Reisland. 1898. (Fourth Edition.)

INDEX

The numbers refer to the pages (Roman numerals to the Preface).

- a sounds, 42 ; neutral or pure [α], 31, 42 ; 'clear' [a], 42 ; English [ʌ], 42
- accent, dynamic = force ; musical = pitch ; 'of time or duration,' 110 ; of syllable, 111 ; level, 112 ; of word, 112 ; chief and secondary, 112 ; of sentence, 112 ; rhythmic, 115, 116, 121
- ach-Laut*, 69
- 'Adam's apple,' 3
- adjusting (or arytenoid) cartilages, 4, 8
- affected speech, ix
- affricate (= stop + related continuant), 113
- alphabet, phonetic, 17
- alveolar continuants, 71 ; [r], 78 ; alveoles, 13
- angle of jaws, 11
- antepalatal stops, etc. = front stops, etc.
- apical, 71
- Articulation of the larynx, 20 ; of the mouth, 25, 65 ; of the tongue against the hard palate: diagram of [i], 60 ; [y], 60 ; [e], 61 ; [φ], 61 ; [ε], 61 ; [ç], 70 ; [ʃ], 73 ; [s], 75 ; [r], 79 ; [l], 81 ; [t], 89 ; basis of articulation, 98
- arytenoid (or adjusting) cartilages, 4, 8
- 'ascending diphthongs,' 44, 49, 112
- aspirate (= stop + h), 86, 114, 133, 136
- assimilation, 129 ; progressive, 134
- Association phonétique internationale*, 17
- Atemgruppen* = breath groups
- Atentakte* = breath groups
- back articulation of tongue and palate, 30 ; back continuants, 12, 67, 68 ; back nasal, 12, 91 ; back of tongue, 11 ; back stops, 12, 87 ; back vowels, 31, 33
- bars of speech, 102
- basis of articulation, 98 ; French, 99 ; German, 100
- bilabial continuants, 13, 82 ; bilabial nasal, 13, 94 ; bilabial stops, 13, 90
- blade of tongue, 11
- breath groups, 102
- breathing, 1, 5, 10
- bronchial tubes, 1
- burr, Northumbrian, 68
- cartilaginous (or whispering) glottis, 4
- children, misconception as to aptitude for learning mother tongue, 14
- 'clear' [a], 42

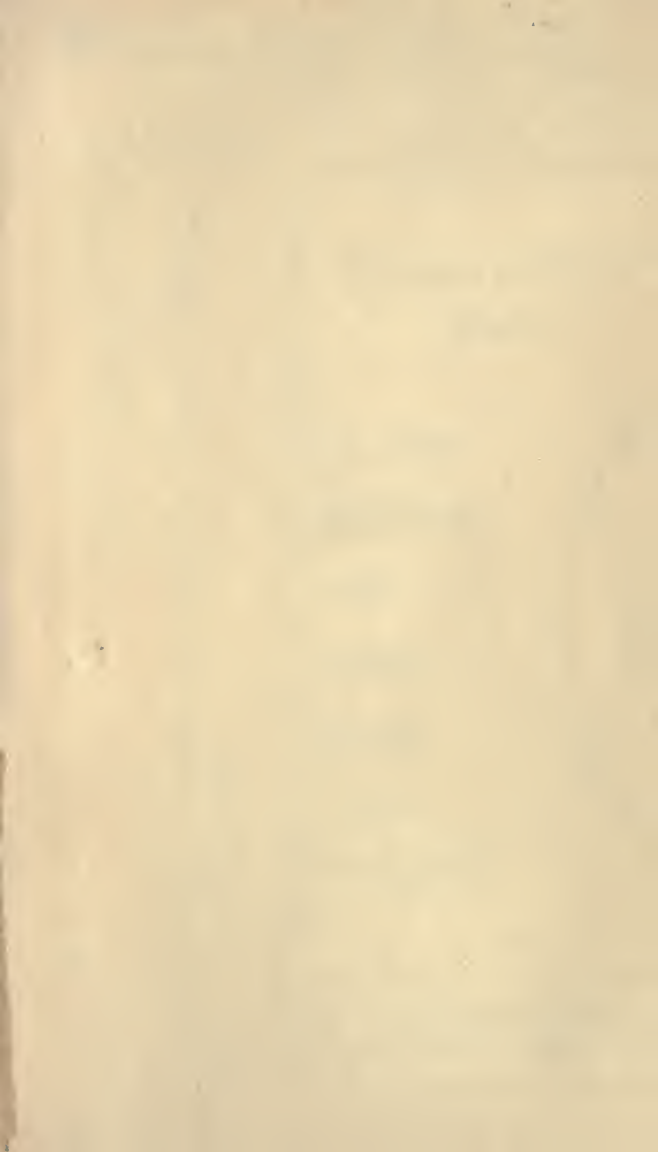
- clearing the throat, 6, 24
 close vowels, 31, 36
 closed syllable, 107
 compound words: English, 113; German, 119
 consonants, 12, 66; table of English, French, German, 95
 continuant, 12, 66
 coronal, 42, 56, 57
 'correct speech,' viii
 coughing, 6, 24
 crescendo = increase of force
 cricoid (or ring) cartilage, 3
 decrescendo = decrease of force, 111
 dental continuants, 13, 71; dental nasal, 13, 93; dental stops, 13, 89
 descending diphthongs, 112
 designation of sounds, 17; of length, force, pitch, etc., 103.
 diphthongising, 131
 diphthongs, ascending, 44, 49, 112; descending, 112
 dissimilation, 129
 dorsal, 67
 dorso-apical, 71
 dorsum = ridge
 double stop = long stop
 'drawling,' 101
 duration = length
 dynamic accent = force
 e sounds, 45; close [e], middle [e], open [ɛ], more open [æ], 45
 elocution, teachers and manuals of, viii
 emphasis = force
 enclitics, 22
 epiglottis, 5
 exhalation, 1
 expiration, 1
 explosive = stop
 falling tone, 123
 falling-rising tone, 123
 faucal stop, 86, 136
 force, 111; vowels, 111; consonants, 112
 fricative = continuant
 front articulation of tongue and palate, 30; front continuants, 12, 67, 69; front nasal, 12, 91; front of tongue, 11; front stops, 12, 87; front vowels, 31; without lip rounding, 45; with lip rounding, 53
 g, pronunciation of German, 69, 71
 gliding, 66, 70, 83
 glottal stop, 6, 24
 glottis, 4; full opening, 20; slight opening, 20; closure, 24
groupes de souffle = breath groups; *de force* = stress groups
 guttural stops, etc. = back stops, etc.
 guttural-palatal = mixed
 h sounds, 59; [h], 6, 10, 20; voiced, 21; *h aspirée*, *muette*, 23
 half-long, 104
 half-short, 108
 half-strong syllable, 112
 hard palate, 10
Hauptton, 23
 held, 66, 70, 83
 high tone, 123
 hissing sounds, 72, 75
 hushing sounds, 72
 i sounds, 50; close [i], open [ɪ], 50

- ich-Laut, 71
 'imitated pronunciation,' vii, 14
 'inaudible,' 102
 inhalation, 1
 interdental, 77
 intonation = pitch
- jaw, lower, 11 ; angle of jaws, 11
- 1 sounds, 80 ; 1 mouillé, 81
 labial stops, etc. = lip stops, etc.
 labialised, 130
 labiodental continuants, 13, 82 ; stop, 91
 larynx, 2 ; articulation of, 20
 lateral formation, 72
 length, 104 ; of vowels : English, 105 ; French, 106 ; German, 107 ; of consonants : English, 109 ; French, 109 ; German, 110
 level stress or accent, 112
 liaison, English, 56, 79, 134 ; French, 88, 90, 135
 lingual r, 68, 78
 lingual stops, etc. = dental stops, etc.
 lip continuants, 82 ; nasal, 94, stops, 90
 lip-lip stops, etc. = bilabial stops, etc.
 lips, 11 ; protrusion, 30 ; rounding, 30
 lip-teeth continuants = labiodental continuants
 liquids, 77
 lisping sounds, 77
 long stop, nasal or liquid, 85, 104, 109
 low articulation of tongue and palate, 30, 42
 low tone, 123
 lower jaw, 11
- Maître Phonétique, Le*, 17
media, 85
 medial formation, 72
 medio-palatal articulation of tongue and palate, 30, 42
 middle articulation of tongue and palate, 30, 42
 middle tone, 123
 'mixed' sounds : vowels, 56 ; [ü], 34 ; [ö], 38 ; [ə], 56 ; [r], 78
 momentary, 104
 Morgagni, sacculus of, 5
mouillé (or palatalised), 129 ; 1, 81
 mouth, 9 ; articulation of the, 25, 65 ; resonance of the, 30
 muscles which act on the adjusting cartilages, 8
 musical accent = pitch
 mutes, 85
- Nachdruckgruppen* = stress groups
Nachdruckstakte = stress groups
 narrow formation of vowels, 32 ; of consonants, 67
 'nasal twang,' 13
 nasal vowels, 10, 58 ; [õ], [ē], [œ], [ā], 58
 nasalising, 136
 nasals, 10, 12, 91
Nebenton, 23
 'neutral' vowel [ə], 35, 56
 Northumbrian burr, 68
 nose, 13 ; 'speaking through the nose,' 14
- o sounds, 36 ; close [o], middle [o], open [ɔ], 37 ; mixed [ö], 38
 ö sounds, 54 ; close [ɸ], open [œ], 54
 open syllable, 107
 open vowel, 36
 oral vowels, 10, 33

- organs of speech, 1; of breathing, 1; of articulation and resonance, 2
 orthography, conventional, vii, 17
 over-long, 108
 over-short, 108
- palatal [a]=clear [a]
 palatal stops, etc. = front stops, etc.
 palatalised, 129
 palate, soft, 9; hard, 10
 pharynx, 9
 pitch, 123
 plosive = stop
 point of tongue, 11
 point stops, etc. = dental stops, etc.
 postdental, 77
 postpalatal stops, etc. = back stops, etc.
 prealveolar, 90
 predorsal, 71
Primer of Spoken English, Dr Sweet's, ix
 principal accent = chief accent 'pronunciation, imitated,' vii, 14
 protrusion of lips, 30
 public speaking, x
 punctuation, 103,
 pure a, 31
 pure vowels = oral vowels
- quantity = length
- r sounds, 78
 range of human voice, 9
 recitative, 123
 resonance of the mouth, 30
 rhythm, 115, 116, 121
 ridge of tongue (or dorsum), 11
 rims of tongue, 11
 ring (or cricoid) cartilage, 3
 rising tone, 123
 rising-falling tone, 123
 rolled r, 78
 rounded, 130
 rounding of lips, 30
- sacculus of Morgagni, 5
 shield (or thyroid) cartilage, 3
 shifting, 113
 short, 104
 sibilants, 72
 slack = wide
 'slovenly' speech, x
 'soft breath,' 22
 'soft' consonants, 66
 soft palate, 9
 song, 123
 sonority, 126
 sounds, table of, 18, 19
 spirants = continuants
spiritus asper, 20
spiritus lenis, 24
 standard speech, viii
 stops, 12; without nasal resonance, 85; articulation of a stop, 85
 stress = force, accent
 stressed = accented
 stress groups, 102
 'strong forms,' viii, 22, 48, 115, 117
 strong syllable, 112
 strongest accent = chief accent
 supradental = alveolar
 syllable, formation of, 127;
 strong, half-strong or weak, 112
- teeth stops, etc. = dental stops, etc.
 tense = narrow
tenuis, 85
 thyroid (or shield) cartilage, 3
 tone, uniform, high, middle or low, rising, falling, rising-falling, falling-rising, 123

- 'tone of voice,' 9, 124
 tongue, 11, 28, 29, 30
 trilled r, 78
 'twang, nasal,' 13
- u** sounds, 33; close [u],
 open [ù], 33; mixed [ü],
 34
- ü** sounds, 55; voiced [y] and
 voiceless [y̥], 55
 'unaccented e,' German, 57
 uniform tone, 123
 untrilled r, 78
 uvula, 9
 uvular [R], 67, 68
- velar stops, etc. = back stops,
 etc.; 'velar stop' also =
 faucal stop
- velum, 9
 ventriloquist, 14
 vocal chords, 4; false vocal
 chords, 5
 voice, 7
 voiced, 7, 66
 voiceless, 7, 66; vowels (*i.e.*
 h sounds), 59
 voice glottis, 4
- vowels, 30; nasal, 10, 58; pure
 or oral, 10, 33; 'neutral'
 [ə], 35, 56; 'mixed' [ü], 34;
 'mixed' [ö], 38; back, 33;
 middle, 42; front, 45; mixed,
 56; voiceless (*i.e.* h sounds),
 59; English, 62; French,
 63; German, 64
 Vowel triangle, 27; tongue
 positions, 28, 29
Voyelle consonnante, 105; *syl-*
labique, 105
- Walter Crane Readers*, Miss
 Dale's, ix
 'weak forms,' viii, 22, 48, 114,
 115, 117
 weak syllable, 112
 wheezing, 21
 whispering, 7
 whispering (or cartilaginous)
 glottis, 4
 wide formation of vowels, 32;
 of consonants, 67
- Zäpfchen* r = uvular [R]
 [ʔ] (glottal stop), 24

PRINTED BY
TURNBULL AND SPEARS,
EDINBURGH





BINDING SECT. APR 29 1964

457996

La Viëtor, Wilhelm
V6667k Elements of phonetics, English, French & German;
.Er tr.by Rippmann.

**University of Toronto
Library**

**DO NOT
REMOVE
THE
CARD
FROM
THIS
POCKET**

*Mary Ann
Sady Carol Foster*

Acme Library Card Pocket
LOWE-MARTIN CO. LIMITED

